10¢ A COPY

The OIL WEEKLY

Exclusively Devoted To The Production and Transportation of Oil and Gas

Engineering News Statistics

January 10, 1930 Volume 56. No. 4

1930

start *right* with

H.C.SMITH *Quality* TOOLS

The rig equipped with H. C. Smith *Quality* Tools is assured of maximum hole, and better cores at minimum cost.

Start right—with the complete line of H. C. Smith coring, underreaming and drilling tools — and 1930 will show marked reductions in operating costs with correspondingly higher records of accomplishment.

Complete information and performance data on any or all H. C. Smith *Quality* drilling, coring and underreaming tools will be supplied on request.

The New H. C. Smith Type "G" Demountable Drilling Bit: A Noteworthy addition to the H. C. Smith line of *hole makers.* Drop-forged of special alloy steel of perfected design and a new method of diamond metal setting and hard surfacing. Makes hole faster and straighter. Two point roller reamers steady bit in hole, insuring straighter hole, and eliminate necessity of reaming down to get new bit on bottom. Can be run with either roller reamer body or plain body.

The Famous H. C. Smith Type "C" Coring Outfit: Takes perfect cores in any formation that a fishtail or disc bit will penetrate. Drop-forged high carbon steel throughout with renewable cutterheads which eliminate rebuilding. Cutterheads can be changed quickly and easily. All four blades cut to same gauge, keeping hole out to gauge. Serrated feature of bit blades provide easier penetration of all hard and soft formations.

H. C. SMITH MANUFACTURING CO., Inc.

Los Nietos, California

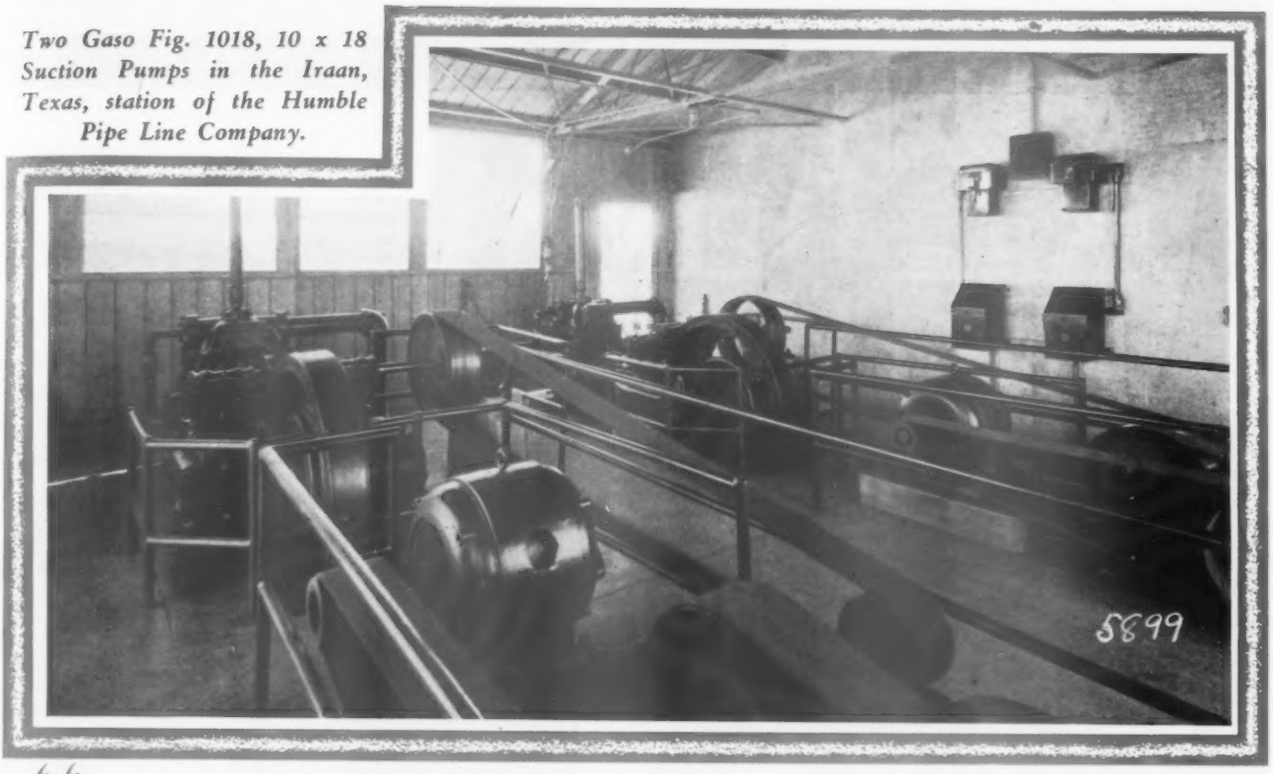
Branch Offices and Warehouses:

Bakersfield, Calif. Ventura, Calif.

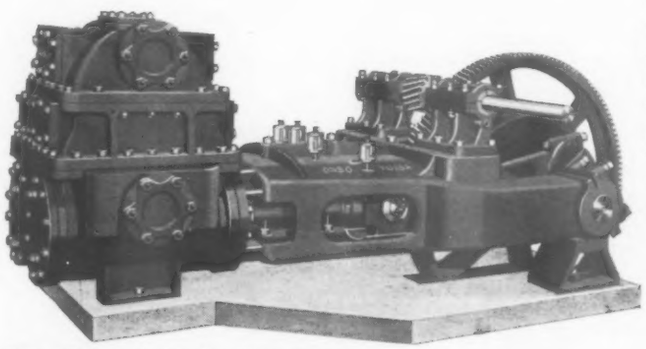
Cable Address: "Smithco, Whittier"

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 10 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

Two Gaso Fig. 1018, 10 x 18 Suction Pumps in the Iraan, Texas, station of the Humble Pipe Line Company.



"IMPROVES" on acquaintance



Gaso Horizontal Duplex Piston Suction Pump Fig. 1018. 6, 8 or 10-inch liners x 18-inch stroke. Capacities from 377 bbls. per hour at 225 lbs. pressure to 1045 bbls. at 175 lbs. Can be arranged for direct drive by oil engine or motor through reduction gears.

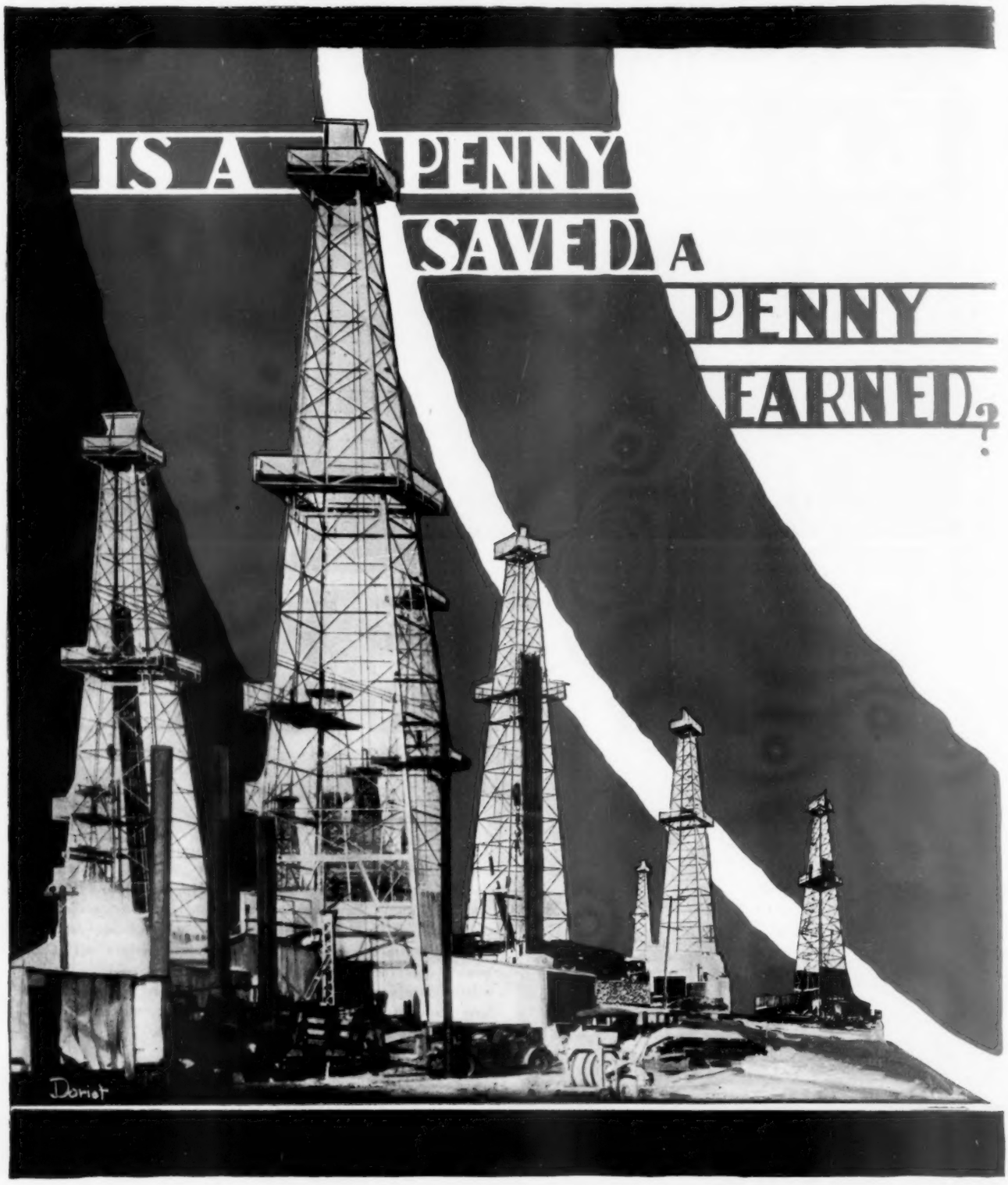
Like those staunch persons whose many good qualities are disclosed in the course of a long friendship, the Gaso Fig. 1018 Suction Pump "improves on acquaintance." Scientific simplicity of design, uncommonly heavy construction, and the same accurate workmanship which characterizes all Gaso pumps, combine to render this an extremely capable and trustworthy machine. Its good qualities are most apparent after long acquaintance by the men who operate it and the men who probe with sharp pencils into operating costs.

Send your requirements for detailed description of Gaso Pumps for any purpose.

GASO PUMP & BURNER MFG. CO.
Tulsa, Oklahoma

210 Petroleum Building, Fort Worth, Texas
535 Fifth Avenue, New York, N. Y.

GASO PUMPS
for every oil industry need



IDECO STRUCTURAL STEEL

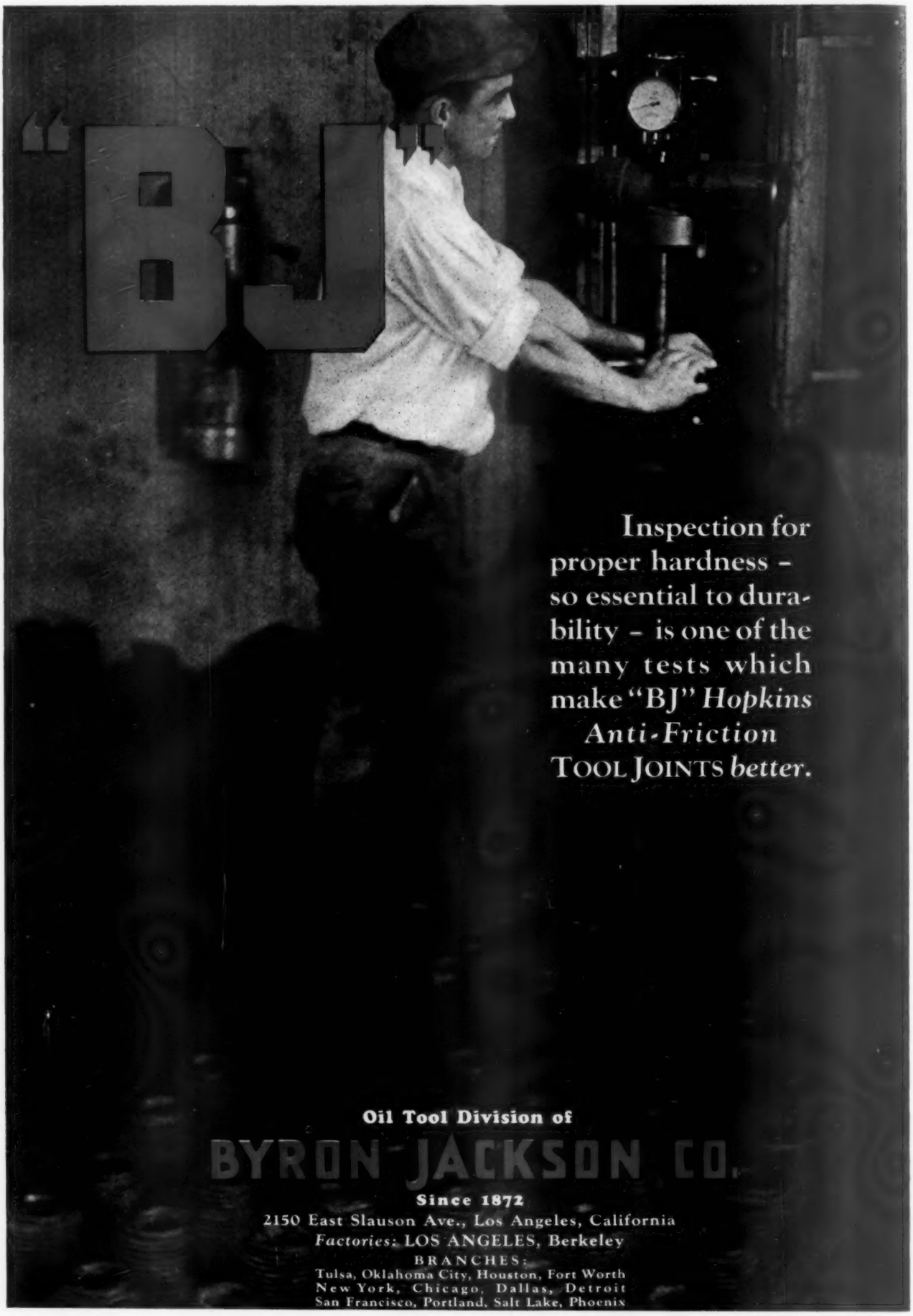
The International Derrick & Equipment Company

Columbus, Ohio **Los Angeles, Cal.**

Is there such a thing as a bargain in oil field equipment? IDECO Structural Steel Derricks and the other galvanized rig equipment costs no more than you would expect to pay for a product you hope to render you years of uninterrupted service.

DERRICKS

Plants: Columbus, Delaware, Ohio; Houston, Beaumont, Texas; Torrance, California. *Sales Offices:* Columbus, Ohio; New York City, N. Y.; Detroit, Michigan; Tulsa, Oklahoma; Ft. Worth, Houston, Texas; Shreveport, Louisiana; Wichita, Kansas; Denver, Colorado; Los Angeles, California; Maracaibo, Venezuela. *Warehouses and Yards:* Columbus, Ohio; Tulsa, Seminole, Tonkawa, Maud, Sasakwa, Allen, Oklahoma City, Oklahoma; Wichita Heights, Kansas; Bakersfield, Torrance, California; Houston, Big Spring, Odessa, Pyote, Borger, Mexia, Luling, Grand Saline, Wichita Falls, Orange, Texas; Shreveport, Lake Charles, Oil City, Louisiana; El Dorado, Smackover, Arkansas.
Export Representation: 74 Trinity Place, New York City; Columbus, Ohio; Houston, Texas; Los Angeles, California.


"BJ"
Inspection for proper hardness – so essential to durability – is one of the many tests which make "BJ" *Hopkins Anti-Friction* TOOL JOINTS *better.*
Oil Tool Division of
BYRON JACKSON CO.
Since 1872
2150 East Slauson Ave., Los Angeles, California
Factories: LOS ANGELES, Berkeley
BRANCHES:
Tulsa, Oklahoma City, Houston, Fort Worth
New York, Chicago, Dallas, Detroit
San Francisco, Portland, Salt Lake, Phoenix

FIELD MEN KNOW AMERICAN WIRE LINES

(ON THE YELLOW REELS)

GIVE THE BEST SERVICE ON THE JOB....

"If Continental Sells It . . . . There Is No Better"

THE CONTINENTAL SUPPLY CO.

General Offices: ST. LOUIS. *Export Offices,* 74 Trinity Court, NEW YORK

London Offices: 316-17 Dashwood House, Old Broad St., E. C. 2.

THE CONTINENTAL SUPPLY CO., Ltd.

224 Traders Building, Calgary, Alberta, Canada

J509

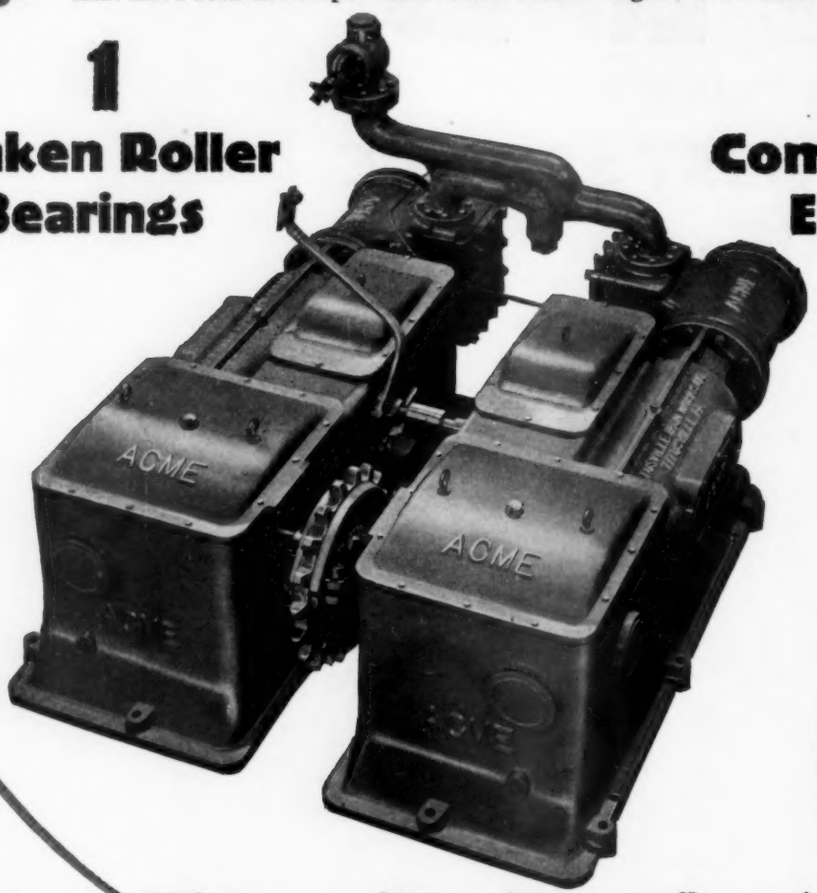
CONTINENTAL

3 reasons

that have sold the improved ACME Steam Engine to oil men all over the country.

1
Timken Roller Bearings

2
Completely Enclosed



TITUSVILLE OIL COUNTRY
TITUSVILLE
MACHINERY
BUILT WITH RESERVE RUGGEDNESS

3
It's a Titusville Product

AND that third reason is the one that tells you that the improved ACME Roller-Bearing Twin-Cylinder Steam Engine has everything that you—as an oil man—could hope for in engine equipment.

The improved ACME Engine has been designed to give you more power and greater freedom from attention and maintenance costs—with its balanced crankshaft mounted on Timken Roller Bearings, its flood lubrication in a fully enclosed crankcase. Another notable improvement is the introduction of a two-piece main frame which permits the replacement of either half should accidental breakage occur.

Why not drop us a line and get the complete details? A post-card will do.

THE TITUSVILLE IRON WORKS COMPANY
Division of Struthers Wells-Titusville Corporation
TITUSVILLE, PA.

Mid-Continent Office
503 Exchange National Bank Building
Tulsa, Okla.

For California
California Machinery Supply Co.
2449-55 Hunter St. Los Angeles, Calif.

Exclusive Export Distributors: American Steel Export Company, Inc., 535 Fifth Ave., New York, N. Y.

TITUSVILLE
OIL FIELD EQUIPMENT
GAS ENGINES—PUMPS—BOILERS—DRILLING RIGS—STEAM ENGINES

TIW-42

Regan Control Heads

for any combination of sizes for A.P.I. casing Trout, Butler, Rasmussen, Patents

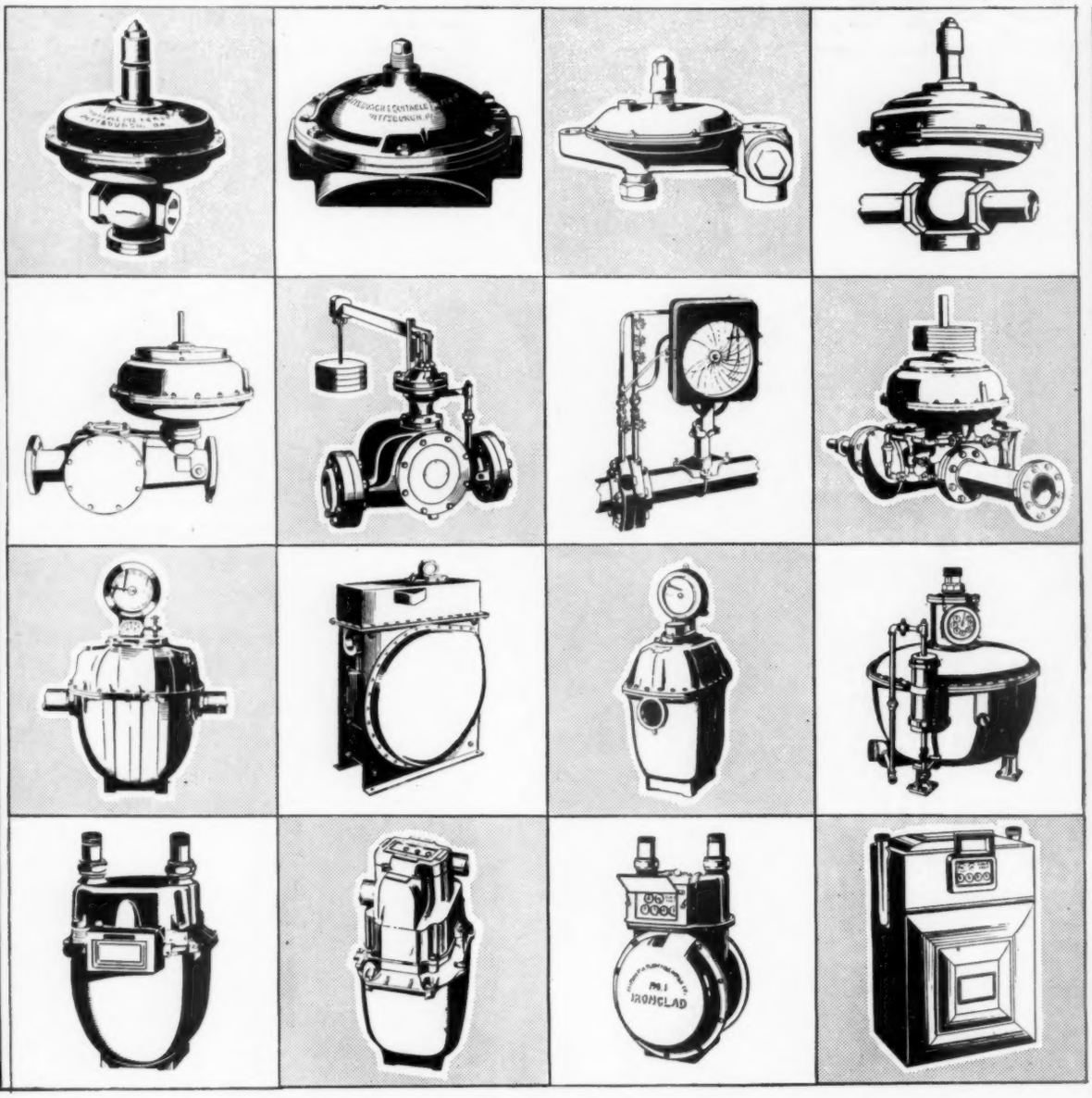
The illustration shows a typical API assembly of a Regan Control Head in combination with a Santa Fe type landing base. The large lower flange can be landed on a concrete base and will safely carry the total load of all the strings of casing. Provision is made for anchoring the tie rods for tying the complete Christmas Tree together . . . thus greatly reducing vibration and the possibility of screw joints loosening.

Regan
Forge & Engineering Co.
Oil Field Equipment
Plant and General Offices:
SAN PEDRO (Los Angeles Harbor) CALIFORNIA, U. S. A.
New York Office
75 West Street
Wm Braat, Manager
Mid-Continent Office
Dallas, Texas
501-2 Marvin Building

New York Office
75 West Street
Wm. Braat, Manager
Mid-Continent Office
Dallas, Texas
501-2 Marvin Building
REPRESENTATIVES
Oklahoma City, Okla. 2420 W. 21st St.
Pecos, Texas P. O. Box 441
Maracaibo, Venezuela Wm. Adams, care Amer. Consul

EMCO

THE ONLY COMPLETE LINE OF METERS AND REGULATORS



PITTSBURGH EQUITABLE METER COMPANY

Main Office and Works—Pittsburgh, Pa.

New York City · Chicago, Ill. · Tulsa, Okla. · Dallas, Texas · Los Angeles, Calif. · Columbia, S. C. · Salt Lake City · Kansas City, Mo. · Seattle, Wash. · Houston, Texas

EMCO METERS AND REGULATORS

"For every joint on every line"

FLEXIBLE LEAK-PROOF

VICTAULIC

REG. U. S. PAT. OFF.

PIPE COUPLINGS

"For every joint on every line"

Quick, tight, permanent, economical **— flexible expansion joints between every pipe length.**

All pressures from vacuum up — for all sizes of steel, wrought iron, cast iron, and spiral weld pipe.

Mail the coupon for details.

VICTAULIC COMPANY OF AMERICA
26 Broadway New York

VICTAULIC DISTRIBUTORS

Mid-Continent and Southern
HANLON-WATERS, INC.
Tulsa, Oklahoma

Western
DUCOMMUN CORPORATION
Los Angeles, California

Canada
D. B. McWILLIAMS
Toronto, Canada

Western Pennsylvania
PITTSBURGH SUPPLY COMPANY
Pittsburgh, Pennsylvania

Illinois, Indiana
BELL and GOSSETT
Chicago, Illinois

Ohio
CASE HARDENING SERVICE CO.
Cleveland, Ohio

Minnesota, Wisconsin, Iowa
F. S. VAN BERGEN
Minneapolis, Minnesota

FOR CRUDE OIL GAS WATER SEWAGE COMPRESSED AIR ETC.

For uses, installations, specifications and prices, fill in and mail this coupon.

VICTAULIC COMPANY OF AMERICA
26 Broadway New York

Please send Victaulic Bulletin No. 8

Name.....

Address.....

If a mystic glass could show you how the valve parts will look in ten years

When you are purchasing valves, if you could see what inside workings of the valve will look like after good hard use, it would be no problem at all to pick the right valve. And the Darling Valve is the valve you would pick, even though it does cost more. It has the stamina to continue in giving first class service long after valves that cost a little less have been discarded.

DARLING VALVE & MFG. CO., Williamsport, Pa.

NEW YORK CHICAGO OKLAHOMA CITY HOUSTON

Mid-Continent Distributors:

Frick-Reid Supply Corp. International Supply Co. Petroleum Supply Co.

California Distributor:

Petroleum Equipment Company, Los Angeles

Foreign Sales Manager:

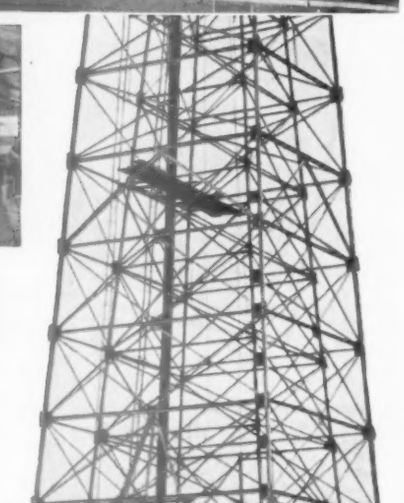
H. M. Hein, Room 1405, 152 West 42nd Street, New York, N. Y.

DARLING GATE VALVES

BUTLER
READY-MADE
STEEL BUILDINGS

FOR ALL OIL FIELD PURPOSES

FIELD offices, dwellings, pump stations, power belt houses, flowing plants, refineries, material supply depots, warehouses, bunk and mess halls, garages . . . Butler Ready-Made Steel Buildings shelter practically every activity of the oil fields. And the reasons . . . fire-safeness to offset remoteness from fire protection, complete materials, ready made and readily transported to outpost operations, speed in erection by whatever sort of labor crew available, lower investment and maintenance charges, structural qualities which insure permanence, yet which permit enlarging or taking down and re-erection. Send for the new booklet picturing many Butler installations. Call upon Butler engineers to supply full details and prices on any type structure in mind.

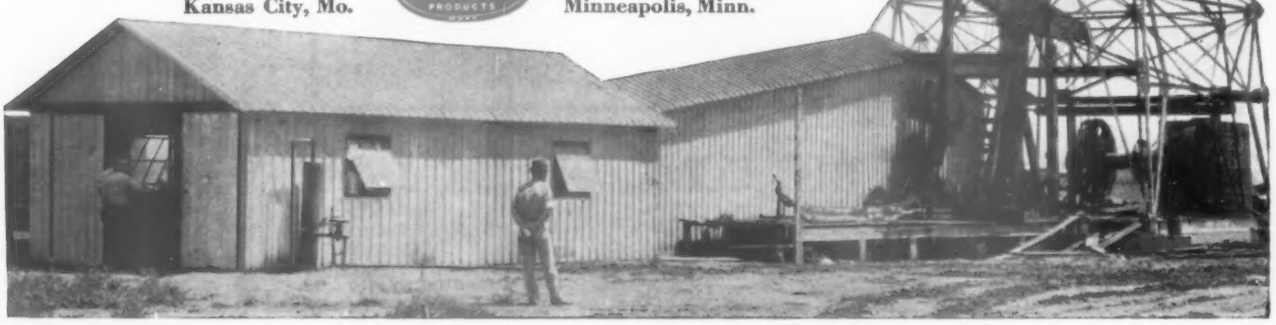


BUTLER MANUFACTURING COMPANY

1246 Eastern Avenue
Kansas City, Mo.

STEEL BUTLER PRODUCTS

946 Sixth Ave., S. E.
Minneapolis, Minn.



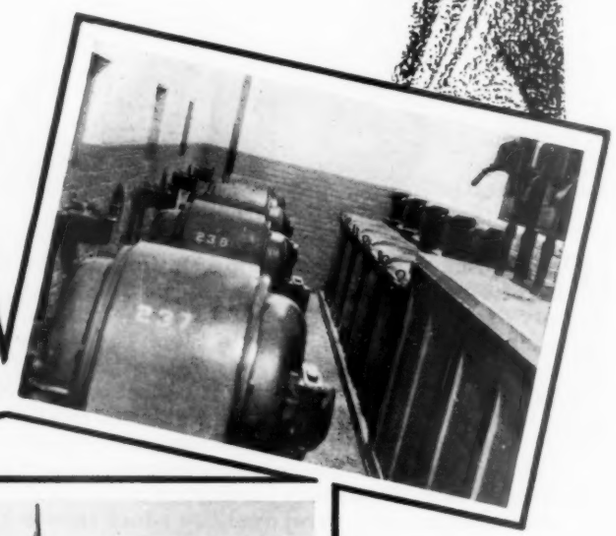
Automatic Pump Control

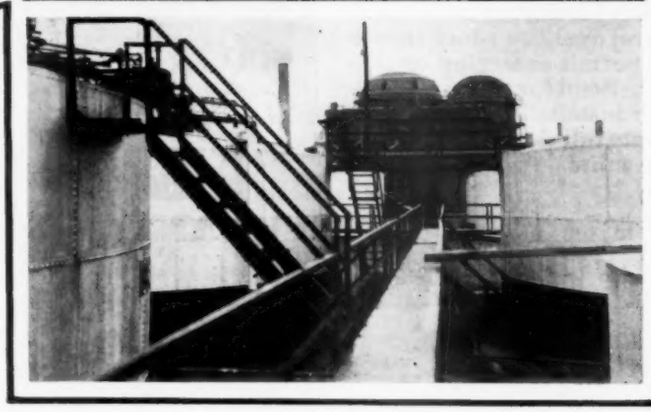
For pipe line-booster or distillate pumps

Control that operates pumps automatically day after day, maintaining a nearly constant pressure in a system, is a real economy. A real watchman which not only guards against excessive pressures but which will also, when required, sound an alarm should the pressure drop, due to a leak in the line.

Your electrically driven pumps can be started and stopped automatically as the pressure varies in a storage tank or in a pipe line. EC&M Automatic Pump Control equipment is your guarantee.

EC&M Pressure Regulators can be supplied to start and stop the motors through EC&M Flameproof Motor Starters and, where required, EC&M Vacuum Regulators may be used to stop motors and sound an alarm. Write for Bulletins 1042-F, 1047 and 1100-L describing this equipment.





Often the motors cannot be placed in a control room, due to space limitations. However, EC&M Oil-immersed Motor Starters are weatherproof as well as flameproof, so that they can be mounted in the most convenient place.

In the installation directly above, valuable floor space was saved by mounting these three EC&M Automatic Low-Voltage Compensators on the roof of a crude oil booster station building.

Equally important as the dependability of the Motor Starters is their flameproof construction which removes the hazard of a disastrous fire.

The five 2300 volt EC&M Motor Starters illustrated above, are completely flameproof because they are totally oil-immersed. Moreover, the individual, oil-immersed master switches, shown over each motor and which provide local control, are likewise flameproof.

At the left is shown a continuous still and distillate tanks, where EC&M Control Equipment insures not only flameproof, but reliable operation.

THE ELECTRIC CONTROLLER & MFG. CO.

CLEVELAND, OHIO

NEW YORK-50 CHURCH ST.
CHICAGO-CONWAY BLDG.
DETROIT-DIME BANK BLDG.
BIRMINGHAM-BROWN-MARX BLDG.
CINCINNATI-1ST NATIONAL BANK BLDG.
DENVER-KITTREDGE BLDG.
LOS ANGELES-912 E. THIRD ST.
HOUSTON-1006 WASHINGTON AVE.
TORONTO-REFORD BLDG.
PHILADELPHIA-WITHERSPOON BLDG.
PITTSBURGH-OLIVER BLDG.
SAN FRANCISCO-CALL BUILDING
MONTREAL-CASTLE BLDG.
TULSA-217 E. ARCHER ST.
SEATTLE-ALASKA BLDG.

...whether eye glasses or hardfacing

IT'S THE SERVICE THAT COUNTS

You wouldn't buy your eye glasses from a street vendor even though you could get them at a ridiculously low price. You couldn't afford to take a chance of ruining your eyes! But you'd go to a reliable specialist and pay more . . . to assure quality in materials and service.

The same holds true when buying hardfacing. You can't afford to take a chance of cutting your drilling speed by using anything but the highest quality hardfacing on your tools. That is why wise operators are using Blackor. It costs a little more but it resists abrasion from 3 to 5 times longer and helps get more hole . . . quicker. Try it on *your* tools and note the difference!

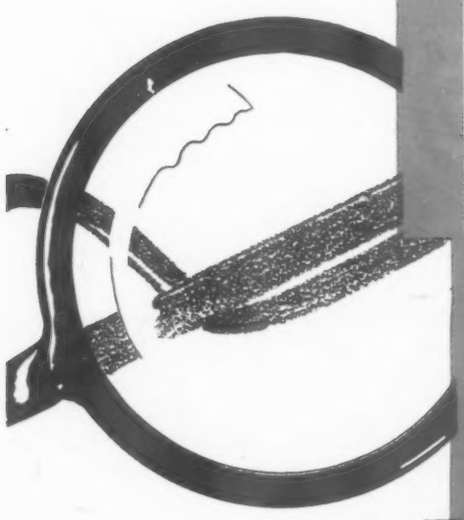
Blackor Company

Head Office: 13007 South Main St., Los Angeles, California

New York Export Office: 39 Cortlandt St.

Tulsa, Oklahoma Office: 410 Thompson Bldg.

Houston, Texas, Office: 616 Public National Bank Bldg.



—do you buy quality or a price tag?

Blackor is granular in form and does the work of both hardfacing and inserts. The genuine standard abrasion resistor.

PROTECTED BY AMERICAN PATENT PROTECTION CORPORATION

Licensed Under Patent Nos.:

1,613,942	16,341
1,424,536	15,311
359,925	2,580
30,021	1,069

Reissue No. 17,323

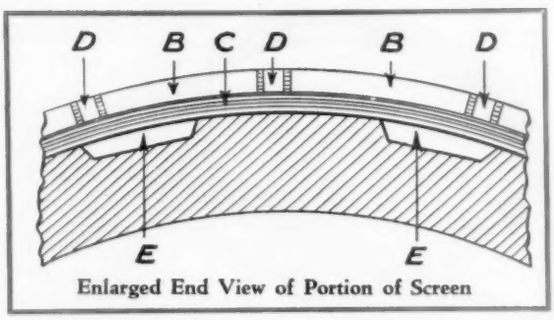
Other Patents Pending.

BLACKOR

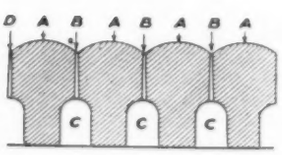
The Super Abrasion-Resistant Facing

CONTROLS THE SAND

The accuracy of spacing which characterizes GETTY CONSTRUCTION has long been known. This is due to accurate standardization, correct methods, and a careful supervision. Accuracy of spacing with structural strength constitutes a guaranty that the GETTY SCREEN will remain accurate after installation in the deepest wells regardless of the grief encountered while passing down by the rocky walls of crooked holes. The abrasion on the wires due to dragging against the walls of the hole has little or no effect.



Enlarged End View of Portion of Screen



On account of the rounded top of the wire, the points A-A-A-A receive the abrasion as the strainer passes down the rocky sides of a crooked hole, and the edges of the entry slits B-B are protected. The broad, square-faced lugs "D" hold the wires immovably in place. The entry slit "B" is slightly larger at the discharge side where the fluid enters the passage way "C" thus permitting the fluid to pass more freely between the wires to the vertical grooves E-E running lengthwise in the surface of the screen pipe.

SCREENS FAST

The construction is such as to provide for the greatest possible degree of freedom for the travel of fluids from the point of entry to that of discharge at the interior of the pipe. There is unrestricted passage from any point in the screening surface to the interior whether the fluid enters opposite the pipe perforations or not. Study carefully the illustrations shown here and note the advantages in screening capacity over other screens.

Write for information.

FRED I. GETTY

Cable Address: FIGOIL

JENNINGS, LA.

Telephone 129

The HIGHER STANDARD

DO you remember the costly delays and fishing jobs caused by broken jars of the old type? The jars that failed at the welds?

Revolutionary were the new and higher standards set by Spang (patented) Weldless Jars.

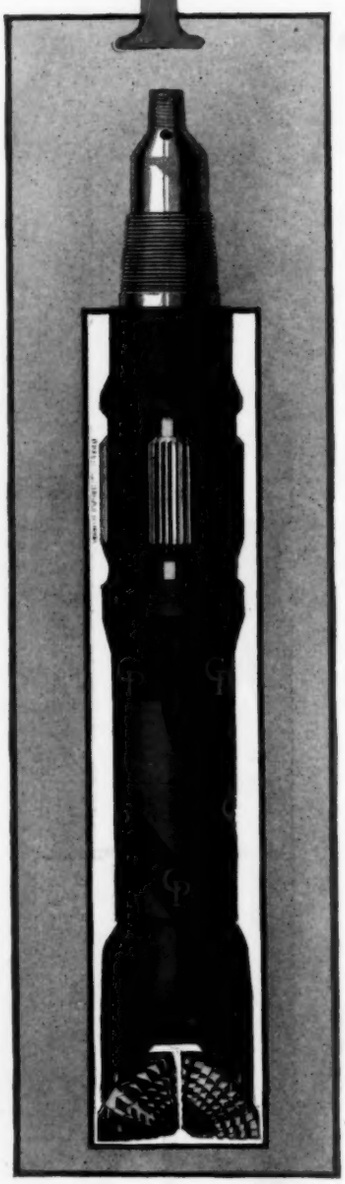
Today, in all fields, on all tools, Spang Weldless Jars are standard equipment. Out and out predominance like this does not come by accident. Spang Weldless Jars out-drill, out-fish, out-serve any jar ever made.

SPANG & COMPANY
Butler, Pa.

With the NEW CP "Tucone" ROCK BIT

9 POINTS OF SUPERIORITY

1. SAFETY—Extra large drop-forged spindle bearings. No cone bushings. One-piece bit head. One-piece reamer body. FISHING ELIMINATED
2. CIRCULATION—Fluid stream jets directly on bottom of hole. No side-wall hydraulicking. STRAIGHT HOLE
3. CLEARANCE—Over 34% of hole area is clear. "Balling up" eliminated. STRAIGHT HOLE
4. CONES AND SPINDLE BEARINGS—Cones run on extra large replaceable drop-forged spindle bearings. Stronger and thicker cone wall section due to absence of bushing. GREATER STRENGTH
5. REAMERS—Three units, properly spaced and located for accurate reaming. New type reamer bearing eliminates wear on reamer body. KEEPS GAUGE — ALWAYS!
6. ONE-PIECE BODIES—Both bit and reamer bodies are solid manganese steel. GREATER STRENGTH
7. REPLACEMENTS—Cone-and-bearing units and reamers easily and quickly changed. TIME SAVED
8. LOW MAINTENANCE—Body repairs eliminated. No wear on bit head or reamer body. MONEY SAVED
9. CONE SERVICE—New CP "Red Head" cutting cones can be refitted on your used bearings (only at authorized CP Service Stations) and guaranteed by CP to be as good as if a new bearing were used—at a great saving to you! ECONOMY



(PATENTED)

CONE SERVICE!

New CP "Red Head" Cutting Cones can be re-fitted on your used bearings (only at authorized CP Service Stations) and are guaranteed by CP to be as good as if a new bearing were used at a great saving to you!

ECONOMY!

WHEN a CP "Red Head" Cutting Cone wears down, it can be sent with its bearing to a local, licensed CP Service Station where the cone will be stripped from its bearing and a new, factory-made cone will be re-fitted on the same bearing. The complete assembly will be sent back to you, ready for service, and THE COST WILL BE MUCH LESS THAN FOR A COMPLETE NEW ASSEMBLY! We guarantee that such replacement can be made on original bearing at least once and that the assembly will be as good as if a new bearing were used! You can identify a new, genuine, factory-made, guaranteed CP Cutting Cone by its "red head"!

CHICAGO PNEUMATIC TOOL COMPANY

General Offices: Chicago Pneumatic Bldg., 6 East 44th St., New York

OIL TOOL DIVISION OFFICES:

OKLAHOMA CITY, OKLA. — 655 Santa Fe Ave., LOS ANGELES, CAL.

KEEPS GAUGE ...ALWAYS! OT-19

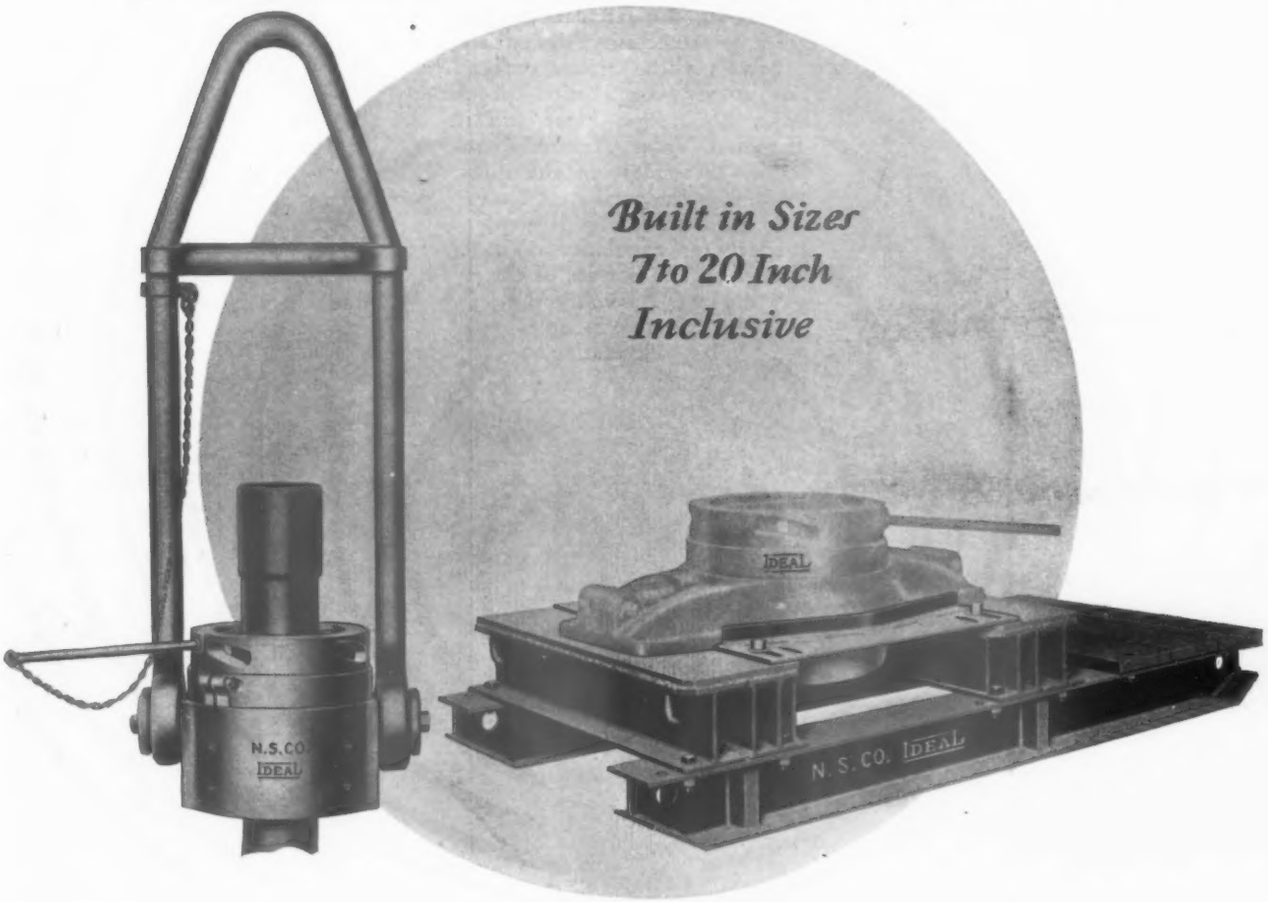
That the use of CP "Tucone" Rock Bits will unquestionably result in lower drilling costs, we are ready and willing to prove in any way YOU say! An inquiry to any of the above addresses will receive immediate attention.

IDEAL

AUTOMATIC GRIP ELEVATOR

GRIP SPIDER

GRIP SPIDER SUB BASE



Built in Sizes
7 to 20 Inch
Inclusive

Descriptive Bulletin
No. 38A
Sent on Reguest

THE
NATIONAL SUPPLY
COMPANIES

Here's 8-Way Accident Insurance on Your Drilling String

From a standing start, five years ago, to standard equipment on wells in every important oil field in the world—that's a record for the Baker Drill Pipe Float that tells its own story of greater economy and efficiency in operation. ¶There are always good reasons behind any such phenomenal success. Here are a few reasons for the universal adoption of the Baker Drill Pipe Float: ¶It relieves the weight on the derrick and rig equipment, as well as the lines and draw works. ¶It lengthens the life of the wire lines and the brake bands. ¶It floats the string down the well gently and safely. ¶It minimizes—often prevents entirely—any accident or damage in case the string should part. ¶It prevents the plugging of the bit, and the resultant loss of time. ¶It eliminates disagreeable wet jobs. ¶It does not —cannot—lug the circulation. ¶In extreme cases of necessity, the back pressure valve may be broken out easily. ¶The sturdy construction of the Baker Drill Pipe Float and its Patented Valve Assembly, are easily discernible in the illustration below, and it will also be noted that there is ample space for circulation. The lugs on the bottom of the Valve Assembly prevent it from stopping circulation.

BAKER
OIL TOOLS, INC.
Box L, Huntington Park, Calif.

Export Sales Office:
25 Broadway, New York City

Mid-Continent Branches:
Tulsa, Okla.
Houston, Texas

California Branches:
COALINGA TAFT BAKERSFIELD VENTURA

Mid-Continent Distributors:
B & A SPECIALTY CO.
220 E. Brady St., Tulsa, Okla.
2301 Commerce St., Houston, Texas

©CIB 62621

A Gulf Publishing Company Publication

The OIL WEEKLY

Member Audit Bureau of Circulations

JANUARY 10, 1930

VOLUME 56, No. 4

Edited Weekly at Houston, Texas

SPENCER W. ROBINSON, EDITOR

TABLE OF CONTENTS

Special Features

Refinery Runs Should Not Exceed 1929 Total ... 23
By H. J. Struth

Tendency Is Toward Europeanization of South American Oil Operations ... 24
By Roy E. Leigh

Muskegon Field Shows Rapid Decline ... 26
By Wm. H. McGrew

Formulae for Acid Bottle Determinations ... 30
By Alexander B. Morris

Effective Lubrication Essential for Wire Rope in Field Service ... 32
By H. L. Kauffman

Field Work More Productive in December ... 75
By H. J. Struth

Regular Departments

Advertiser's Index ... 122
Markets-Production-Crude Prices ... 37
United States Production Estimates ... 43
Crude Oil Price Quotations ... 44
Completions for Past Week in All U. S. Fields ... 75
Permits Granted for New Wells ... 82
Wildcat Drilling Reports from All Important Areas ... 86
News from California Fields ... 66
North and West Texas Field Notes ... 55
Gulf Coast Field Development Notes ... 59
Oklahoma - Kansas Field Notes ... 50
Personal Mention — Men You Know ... 48
Louisiana - Arkansas Development Notes ... 71
New Equipment, Catalogs, Bulletins, Books ... 117
Squeaks from the Bull Wheel ... 120
Summary of Field Operations for December, 1929 ... 104

Copyright, 1930

Published Weekly

by

GULF PUBLISHING COMPANY

OFFICE OF PUBLICATION

3301 Buffalo Drive, Houston, Texas

R. L. DUDLEY, *President*

A. L. BURNS, *Gen'l Manager*

SPENCER W. ROBINSON, *Editorial Director*

J. KENT RIDLEY, *Managing Editor*

NEW YORK: Room 613, 250 Park Avenue Dick Swinsky, Manager.

PITTSBURGH: 703 Park Bldg., W. W. Pigue, Manager.

CHICAGO: 624 S. Michigan Ave., O. R. Waller, Manager.

LOS ANGELES: 416-417 Haas Bldg., W. E. Green, Manager.

TULSA: 913-916 Hunt Bldg., J. F. Carter, Jr., Manager.

FORT WORTH: 203 W. T. Waggoner Bldg., H. H. King, Manager.

Issued Friday of each week. Single copies 10 cents. Subscription price: Domestic $1.00 a year, Foreign $1.00 a year. Subscription restricted to those engaged in the producing and pipe line branches of the oil business or the manufacture and distribution of oil field supplies. Advertising rates on application.

40,000 feet of hole and still no repairs

This service from a . . . . Hild Electric Drive, again demonstrates the fact that . . .

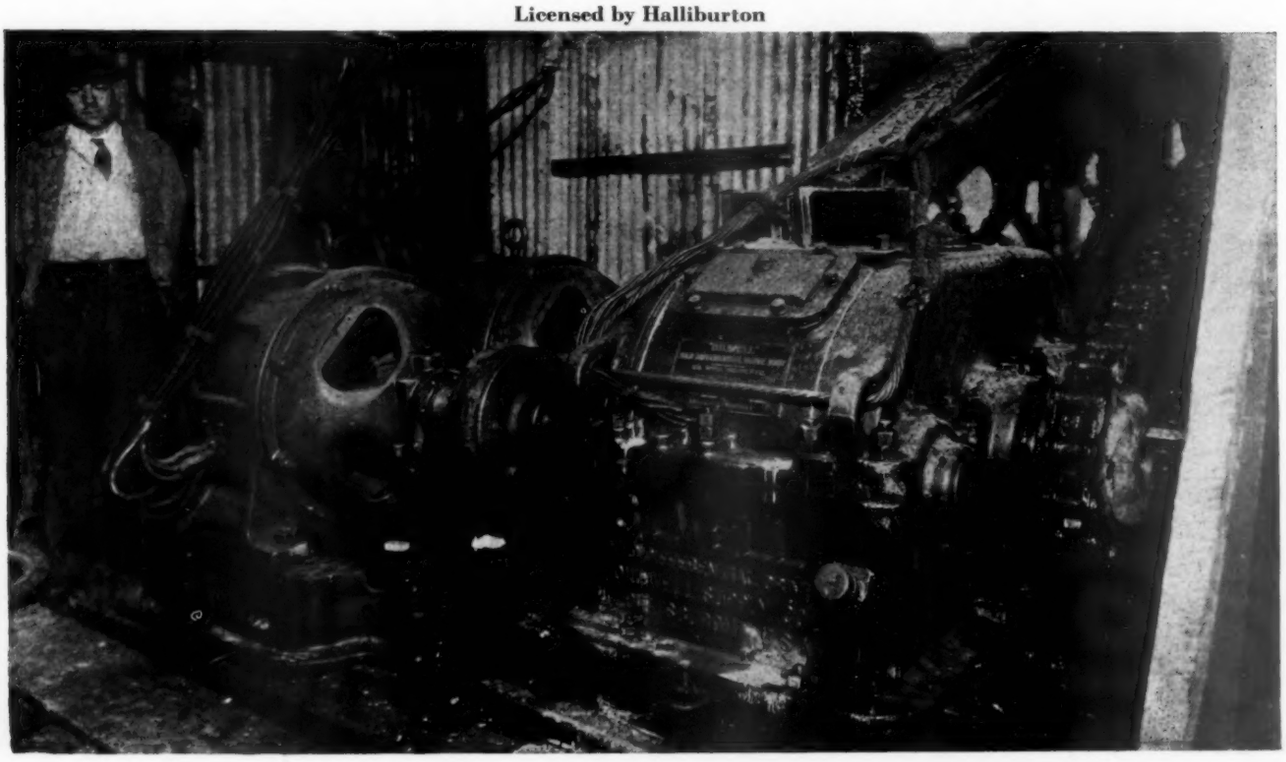
"Oilwell" Equipment is . . more economical . .

OIL WELL SUPPLY CO.

NEW YORK – LOS ANGELES – PITTSBURGH, U.S.A. – SAN FRANCISCO – TAMPICO – LONDON

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

Licensed by Halliburton



JAN 13 1930

Volume 56, No. 4 *January 10, 1930*

The OIL WEEKLY

A GULF PUBLISHING COMPANY PUBLICATION

Refinery Runs Should Not Exceed 1929 Total

By H. J. STRUTH
Staff Economist

CURTAILMENT must continue through 1930 if the industry expects to reap any benefits from the increased demand for refined products. This conclusion is based upon a preliminary survey of gasoline requirements for the current year, and prompts the consideration of producers in planning proration of field outlet. One fact brought out by this survey, which should not be overlooked by the producing branch of the industry, is that the refinery crude requirements for this year should not exceed the total of 1929. As a matter of fact, it is even now apparent that the industry cannot afford to further expand refining operations this year. To do so will obviously result not only in the accumulation of an excessive supply of refined products, but also in the creation of an artificial demand for crude. Under these circumstances, it is logical to conclude that refiners and producers must exert concerted effort this year to maintain still runs and crude production within the limits prescribed by the actual demand for gasoline. This means that the refiner must refrain from increasing his runs to stills over the amounts run in 1929 and, in turn, that the producer must apply even more rigid restrictions afield to maintain production at an even lower rate than last year's records show.

Gasoline Demand

Although it is still too early to obtain an accurate index of the probable demand for gasoline during 1930, lacking final and complete data for 1929, a preliminary survey shows that refinery runs must be maintained at a rate not to exceed those of 1929. A careful check of all data available at this time reveals a decidedly good year ahead for the industry, provided that immediate action is taken to concertedly control the volume of crude processed by refiners. While there is positive evidence that the demand for gasoline and other refined products will show a substantial increase, it is apparent that the rate of increase will not be as great as last year's results indicated. However, a careful check of the opinions of leading motor car manufacturers, combined with other influencing data, seems to offer the assurance that the demand for gasoline during the current year will exceed that of last year by approximately 7.7 per cent. This figure contemplates a substantial increase in the demand from both foreign and domestic consumers, representing the total requirements from the refiner, natural gasoline manufacturer and including imported gasoline.

Last year, in the February 22 issue of THE OIL WEEKLY, the writer estimated the total gasoline demand for 1929 at 438 million barrels, which up to November 30, proved to have been remarkably close to the actual results reported by the Bureau of Mines. As a matter of fact, the cumulative estimate for the 11 months aggregated 403 million barrels, while actual consumption aggregated 401 million barrels. It is therefore apparent that the total demand for 1929 will very closely approximate the estimate of 438 million barrels. This year, the preliminary survey discloses that the total gasoline demand will aggregate approximately 472 million barrels, or an increase over last year of 7.7 per cent. This conclusion is based upon the prospect of a probable average motor vehicle registration during this year of 29,000,000. The estimate also includes the assumption that exports of gasoline will aggregate 75 million barrels. The details of the estimated gasoline demand and probable refinery crude requirements are shown in the accompanying table.

Preliminary Survey of 1930 Gasoline Requirements

	Million Barrels
Domestic gasoline demand	397
Foreign gasoline demand	75
Total indicated demand	472
Natural gasoline content	55
Net gasoline from crude	417
Imported gasoline	15
Net gasoline required from refineries	402
Indicated excess gasoline stock	6
Maximum production required	396

At 40 per cent gasoline recovery, the above represents a maximum crude conversion of 900,000,000 barrels, or a daily average of 2,712,000 barrels.

Runs to stills during December apparently averaged about 2,550,000 barrels daily, while a preliminary standard for January contemplates a maximum total daily run of about 2,382,000 barrels. This data shows that at present rates of processing, refiners are consuming at least 168,000 barrels per day in excess of normal requirements. Business conditions, despite the drastic slump in security prices, appear fundamentally sound and there is now every reason to believe that the petroleum industry will command a reasonable share of prosperity during 1930. The fact remains, however, that there will undoubtedly be a somewhat slackening demand for motor vehicles, which will, in turn, retard the rate of increase in gasoline and lubricating oil demand. This is not construed as unfavorable to the industry, since the indicated increase in motor vehicle registration assures a substantial gain in demand for gasoline.

The immediate future of the industry lies in the hands of the refiner. If the members of that branch of the industry will determine to give cognizance to the need for adequate control of the manufacture of refined products from crude, it is entirely probable that 1930 will prove to be the most prosperous year in the history of the industry. The data presented herein furnishes conclusive evidence of the need for immediate curtailment of still runs and provides the key to normalcy. If every refiner in the United States will determine now to make still runs during 1929 the "dead line" for 1930, the industry cannot fail to emerge from the next season of peak demand in a decidedly more prosperous condition. Similarly, it is up to the producing branch of the industry to give careful study to the refinery situation, in order that the production of crude will be maintained in conformity with normal requirements.

Tendency Is Toward Europeanization of South American Oil Operations

By ROY E. LEIGH
Special Foreign Representative

OBSERVERS are of the opinion that the days of high salaries, which prevailed during the pioneering period of South American Oil operations, are numbered. In the early days, before the construction of comfortable camps and living accommodations, and before the adoption of sanitary and precautionary measures for the preservation of health, oil companies found it necessary to offer high rates of pay to induce competent men to forsake the comforts of home to undertake the conquest of tropics and jungle.

However, as the South American oil industry has expanded, increasing numbers of Americans have become foreign-minded; and greater numbers of Europeans have been attracted to learn the secrets of an industry heretofore practically a closed book to them. Englishmen, Canadians, Dutchmen, Germans, Poles and Russians have flocked into the scientific and engineering branches of the oil industry by the score; and mechanics, clerical men, and others who began in subordinate positions, have served their apprenticeship and, unanimously, are indicating their willingness to do for less money, work for which Americans formerly were paid attractive salaries. Russian emigres are particularly noticeable in engineering and other branches of the industry.

Two irresistible factors, high wages and prosperity in America and low wages and unemployment in Europe, are working toward the gradual Europeanization of South American oil operations. Rates of pay prevailing in Venezuela, Colombia, Peru, and elsewhere are becoming less alluring, as they are hammered down by the employment of low-salaried Europeans to Americans suffering from no lack of employment at home.

Man Power Cost Lower

As naturally might be expected, European companies, who formerly were forced to recruit drillers, production men, specialists, and experts from American fields, are the first to approach the complete Europeanization of their personnel. Strictly British companies are almost completely Anglicized. Shell companies are staffed very largely with British and Dutch employees in all departments except drilling and, to less extent, production. The Shell Group maintains a policy of cosmopolitanism, or of strict impartiality as between nationals of one country or another. Within the various organizations, this policy is doubtless fairly adhered to; but, in recruiting replacements and additions to the staff, as is continually going on, it is inevitable that Europeans will gain the advantage by their willingness to work for less. Even American companies are finding it to their economic advantage to give preference, in filling subordinate and non technical positions, to Europeans and natives of the better class.

It may be assumed that the Standard Oil Company's policy in this regard is outlined in a paragraph pertaining to the operating of its subsidiary in Colombia, which was published in The Lamp, of August, 1926, which reads as follows:

> "In the production, refining, and distribution of oil, the Colombians have shown wonderful adaptability. In the field, those employed about the derricks are making rapid progress toward mastering the drilling science; and it is anticipated that within a very few years much drilling will be performed by native Colombians. In the refinery they have shown a surprising capacity for the mechanical departments. In the case and can factory, where the cans are turned out by intricate and powerful machinery, the entire personnel is now Colombian. On the river, they are in their element. All steamboat men, with the exception of the chief engineer, are Colombians. In the sales branch, which has been recruited largely from the banks and mercantile establishments of the country, only Colombians are employed; and their accuracy and adaptability is a matter of record, annihiliating the fiction that residents of the tropics are unanimously somnolent and careless."

Cable tool operations have already been turned over to natives at Infantas and La Cira; but Americans are still employed exclusively for rotary drilling.

It is of interest to note that, in South American fields generally, natives and Europeans have made more progress in the mastery of the cable tool method than in learning the intricacies of rotary equipment, the reason, perhaps, being that more rapid changes are occurring in the development of the newer method.

Only so long as America maintains her leadership in the invention, development, and perfection of methods, machinery, and appliances employed in the production of oil will American nationals retain their present hold on the majority of supervisory positions. Unfortunately for the European who sets himself to master the intricacies of drilling, gas lift, or other specialized branches of the oil industry, he often finds that his Yankee competitor, meanwhile, has invented or devoleped some new method or process which renders his knowledge obsolete.

For this reason, the American driller has been the last to yield to European competition. However, even the drillers have suffered defeat on certain fronts, as in Ecuador, Peru, and Argentina. Peruvian drillers earning the equivalent of only $2.20 per day have taken complete possession of the Negritos district of Peru; and natives are also employed on cable tool rigs in Argentina, Colombia, and Ecuador, in which latter country they work for as low as one dollar per day. Polish drillers are employed on Austro-Galician rigs used by Anglo-Ecuadorian Oilfields and its associated company, Lobitos Oilfields, in Ecuador and Peru. These Poles are content to work for £22 to £35 per month in the same field with American and British rotary drillers who earn $325 per month, plus footage bonuses which increase their incomes to $500-$600 per month. Native and European drillers are employed exclusively by the Y. P. F., government oil-producing agency in Argentina. West Indian negroes are employed as "head-men" and allowed to handle the rigs during routine operations in the fields of Trinidad, B. W. I. One small operator there employs negro drillers exclusively.

Standard subsidiaries maintain cosmopolitan organizations in Bolivia and Argentina, with Europeans and natives in subordinate and non-technical jobs and Americans in supervisory and specialized positions.

Salaries and Wages in South America

Executive salaries are of necessity somewhat higher than in America and, in addition, such positions carry greater perquisites, such as bungalows, living allowances, automobiles and other privileges. In the American organizations, the more important clerical workers and other key men likewise command better salaries than those which obtain in the United States, as it is the policy of the companies to offer such inducements in order to secure well qualified men. Salaries paid to office workers,

mechanics, etc., are said to be lower in the British organizations, whose staffs—except in the drilling and production departments—are very largely recruited from England, Scotland, and Holland. Nevertheless, they are said to be higher than the ruling rates in European countries. Routine clerical work in almost all instances is done by Venezuelans of the educated class, who receive from $50 to $200 per month. Similar work is done in Trinidad by West Indian negroes and native whites who receive from $65 to $150 per month.

A clearer comparison can be drawn between the salaries paid to field men in North American and South American fields, as their wage rates are more generally standardized and more definitely known.

A drilling job in Venezuela or Colombia is worth at lease $200 per month more than in the United States—and, if allowances were made for time inevitably lost by the average driller employed on daily basis in American oil fields, it would be found that his counterpart in South American fields has even a greater advantage by virtue of his employment on monthly basis. In Mid-Continent and Gulf Coastal fields, rotary drillers receive from $9 to $12 per day, or from $270 to $360 per month if they lose no time on account of sickness or unemployment. Out of this, they must pay their board, medical, and traveling expenses; and fortunate indeed is the man who can calculate his net income at $200 per month — the average being substantially less than that. On the same basis, the driller employed in Venezuela, Colombia, Trinidad, and elsewhere on the southern continent may count almost his entire salary as net, since his employer pays his board, traveling, and medical expenses and bears all the burden of "shut-down" time. The vacation allowance, alone, is worth around $29 per month, as it is customary to allow one month of foreign leave for each year of service. The South American driller has nothing to buy but clothes, tobacco, and incidentals, which enables him to save a substantial part of his salary, if so inclined.

Rig-builder foremen are paid a straight salary of around $350 per month, plus board, lodging, traveling and medical expenses, etc, which figure $11.507 per day, or about half the daily wage of men similarly employed in the United States. Here again, steady employment on straight salary compensates for the loss of time, which is greater in the case of the rig-builder than of the driller working in American fields. American rig-builders are used only in the supervisory positions, as natives have been trained to do satisfactory work at very low wages. Low in comparison with American rates of pay, but correspondingly high in comparison with kages paid in other Latin American industries. Some very capable native crews have been developed in the last five years in the Maracaibo fields; and they are paid accordingly.

Foreign gang-pushers are used to much greater extent in Venezuela than in Trinidad, where negroes are extensively employed as foremen. American and European gang-foremen are paid monthly salaries approximating $225, plus the usual prerequisites, which averages $7.397 per day in comparison with the customary wage of $6 per day, without board, which prevails in certain fields of the United States.

The provident fund of the Shell Companies and the stock-purchase plan of the Standard subsidiaries are very attractive to their employees. Under the Shell plan, employees may deposit 10 per cent of their monthly salaries, up to certain limits, to which the company adds an equal amount, plus variable annual bonuses accruing from the profit-sharing plan, on which amounts trustees of the fund pay interest, out of its earnings from bonds and securities, at variable rates, said to range upward of 6 per cent per annum. The net result, over long periods of time, is that employees withdraw from the fund about three times as much as they put in. It is said that the Shell fund, on the basis of present earnings, will not a driller more than $8,000 in five years time.

The Standard plan is not so attractive, on its face, as the company contributes only 50 per cent of the amounts advanced by the employees. However, appreciation in the market value of the New Jersey stock during recent years has served to offset the apparent advantage of the Shell plan.

In pipe line work, each American or European gang-pusher usually supervises the work of two or three connection gangs, each headed by a corporal. The figures given in the accompanying schedule refer to a skeleton connection gang composed of 12 men. Gangs of such size are used only for laying pipe of small diameter, the size of the gangs increasing with the diameter of the pipe. Venezuelan, Colombian and other South American natives are small of stature, as compared with North Americans. Consequently, much larger crews are required than in America. Crews of 50 men each are required in laying 12-inch pipe.

The native straw-bosses do little or no manual labor, except on drilling and rig-building crews, their duties being to interpret and carry out the orders of their American and European superiors. In drilling crews, the corporal customarily functions as the derrickman, except in Trinidad where the "head-man" serves as an assistant driller.

The standard wage for native subforemen is Bs. 15.00 ($2.895) per day in Venezuela, with a maximum of Bs. 20.00 ($3.86) per day which is paid only to old employees of exceptional ability.

By reference to the accompanying schedule, we find that the lowest wage paid to Venezuelan laborers is that of the water-boys, who receive the equivalent of $1.158 per day. A water-boy in Trinidad would not earn more than half that figure. Laborers receive from Bs. 8.00 to Bs. 10.00 per day, as compared to 3/ to 6/ per day in Trinidad. Wages paid to mechanics and skilled laborers are correspondingly higher in Venezuela than in Trinidad; and higher by 25 per cent to 30 per cent in Colombia than in Venezuela.

Drilling crews consist of seven men on each shift, the driller being the only foreigner on the job. The rough-necks are all natives, except in the case of the Standard Oil Company of California, whose subsidiaries employ American derrickmen. The three-shift system is universally used in proven fields, and each crew works only eight hours per day. Indeed, all field work—drilling, production, pipe-lining, and rig-building— is conducted on the eight-hour basis in Venezuela and Colombia. Longer hours prevail in Trinidad, and elsewhere.

Here again the Venezuelans and Colombians have an advantage over the Trinidadians, who work longer hours for less pay. However, on the basis of results achieved, these higher wages are amply justified, as footage costs in Venezuela are only about half those of Trinidad. The last annual report of British Controlled Oilfields, Ltd., a company operating both in Trinidad and Venezuela, names an average overall cost of $9.40 per foot in the El Mene Field of Venezuela. Operating executives estimate that drilling in the lake-shore fields of the Maracaibo district costs about $8 to $10 per foot, turn-key basis. Sir Thomas Holland, who is the author of a very learned report on the oil industry of Trinidad, estimates that drilling costs average $20 per foot in that colony.

Wage Rates Prevailing in Venezuelan Oil Fields

(Stated in terms of U. S. gold)

Drilling Crew

1 Driller (American).		$11.507
1 Corporal (derrick-man)	2.895—	3.86
2 Floor-men, each	1.93—	2.316
2 Helpers, each	1.544—	1.93
1 Fireman	1.544—	1.93
Total, per day	$22.894—	$25.789

Production Gang

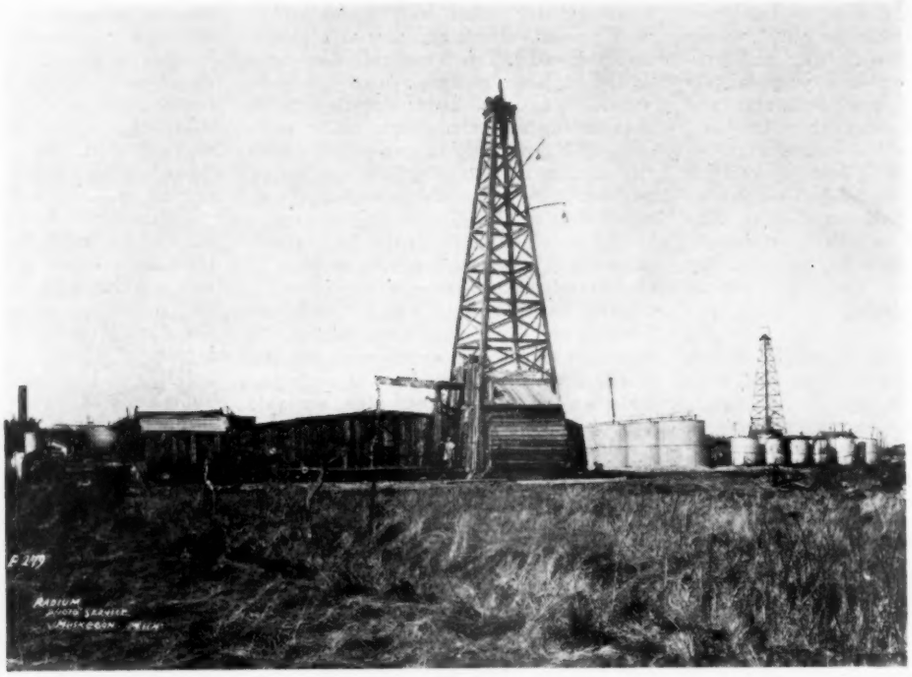
1 Gang-pusher (foreigner)	$	7.397
1 Corporal	2.895—	3.86
3 Roustabouts	1.544—	1.93
Total, per day	$15.924—	$17.047

Rig-builders

1 Foreman (foreigner)		$11.507
1 Corporal	2.985—	3.86
2 Rig-builders, each.		3.088
2 to 4 helpers, each	2.316—	2.702
2 Laborers, each	1.544—	1.93
1 Watchman	1.544—	1.93
With 2 helpers	$29.842—	$32.737
With 4 helpers	$34.474—	$38.141

Pipe Line or Connection Gang

1 Gang-pusher (foreigner)		$ 7.397
1 Corporal	2.895—	3.86
8 Connection men, each	1.544—	1.93
1 Water-boy		1.158
1 Watchman	1.544—	1.93
Total, per day	$25.346—	$29.785



United Petroleum Company's Albert 2, and to the right, Thompson Brothers' Trenz 1, Laketon, Michigan, field

Muskegon Field Shows Rapid Decline *in Both Oil and Gas* Production

By WILLIAM H. McGREW
Staff Representative

THE Mount Pleasant field with 75 producing wells completed and 50 wells drilling, now occupies the spotlight in Michigan, taking the play away from the Muskegon field where declines in both oil and gas production have been recorded successively for the past several months. The estimated production of the Muskegon field comprising Muskegon and Laketon townships, has declined from approximately 19,000 barrels daily flowed production in July to approximately 6000 barrels daily during the first two weeks of December. Natural gas production likewise has dropped from an estimated potential peak of 300,000,000 cubic feet to barely 8,000,000 as of December 15; which is hardly sufficient for the requirements of Muskegon.

Production in the Mount Pleasant field on the other hand has risen to approximately 8000 barrels daily as of December 15, not including the production from five new wells completed during the week of December 9-15, totaling about 510 barrels. These five new wells, all by Pure Oil Company, are located in Chippewa township, Isabella County.

Of the five wells, the largest is the Glenn M. Reem 3A, SW SE, Section 12-14n-3w, which made about 200 barrels initial from the Dundee sand at a depth of 3590 feet. The second largest is the Reem 4-B, NW SE, Section 12-14-3, Chippewa Township, which made 150 barrels initial in the Dundee at 3569 feet. Reem 6-A made 40 barrels at 3590 feet; while Reem 2-B made 20 barrels at 2567-81 feet. Pure Oil Company's W. D. Gibson 8, SE NW, Section 12-14-3, made 100 barrels initial at 3555 feet.

The Mount Pleasant field is located along the boundary line between Isabella and Midland Counties, eight miles east of Mount Pleasant and 16 miles west of Midland on State road M 20. The Chippewa River runs through the field. The field extends along both sides of M 20, its limits rather definitely defined by dry wells, and it is about one and a half miles wide and three miles in length. The region is largely the cut-over wilds which make up the greater portion of this part of Michigan, and which in the past produced a rich crop of lumber.

The discovery well was brought in by Pure Oil Company in February, 1928, in Section 18, Greendale Township, Midland County. The Dundee sand is reached at approximately 3500 feet in this field due to the dip in the basin, whereas in the Muskegon field it is reached at from 2000 to 2100 feet.

Production by July 1, 1929, had reached 3000 barrels daily from 18 wells in the Dundee and two in the Traverse. At this time the entire production of the field was being handled by Pure Oil Company pipe lines consisting one three-inch and two one-inch, to Mount Pleasant from whence it was shipped by rail to Bay City, thence by boat to the British American Refining plant at Sarnia, Ontario. Shortly after July 1, Ohio Producers and Refiners Oil Company secured a right-of-way for a pipe line to Mount Pleasant.

Oil Good Quality

In addition to the 125 wells drilled and drilling, there are from 125 to 150 proven locations to drill. After the worst of the winter has passed considerable acceleration of drilling activity is expected.

Crude from the Mount Pleasant field averages 42 gravity, and is of good quality. Sulphur content which is present to such a marked degree in the Dundee crude of the Muskegon field is not present with the result that it has continuously com-

FIELD SUMMARY AS OF DECEMBER 9, 1929

Nature	Muskegon	Laketon	Total
Oil Wells	188	132	320
Gas Wells	36	0	36
Dry Holes	38	22	60
Abandoned	29	13	42
Drilling	9	0	9
Spudding	0	1	1
Rigging	6	0	6
Fishing	0	0	0
Locations	19	23	42
Shut Down	5	2	7
	330	193	523
Wildcats			84
Total, Western Michigan			607

Western Michigan Wildcats
Newaygo, Oceana, Ottawa and Kent Counties

Muskegon County Wildcats			
Completed test	1	Oil Producers	1
Dry	21	Completed test	9
Abandoned	4	Dry	23
Drilling	0	Abandoned tests	3
Spudding	0	Drilling	8
Rigging	0	Spudding	0
Fishing	0	Rigging	0
Locations	0	Fishing	1
Shut down	1	Locations	0
	27	Shut down	12
			57

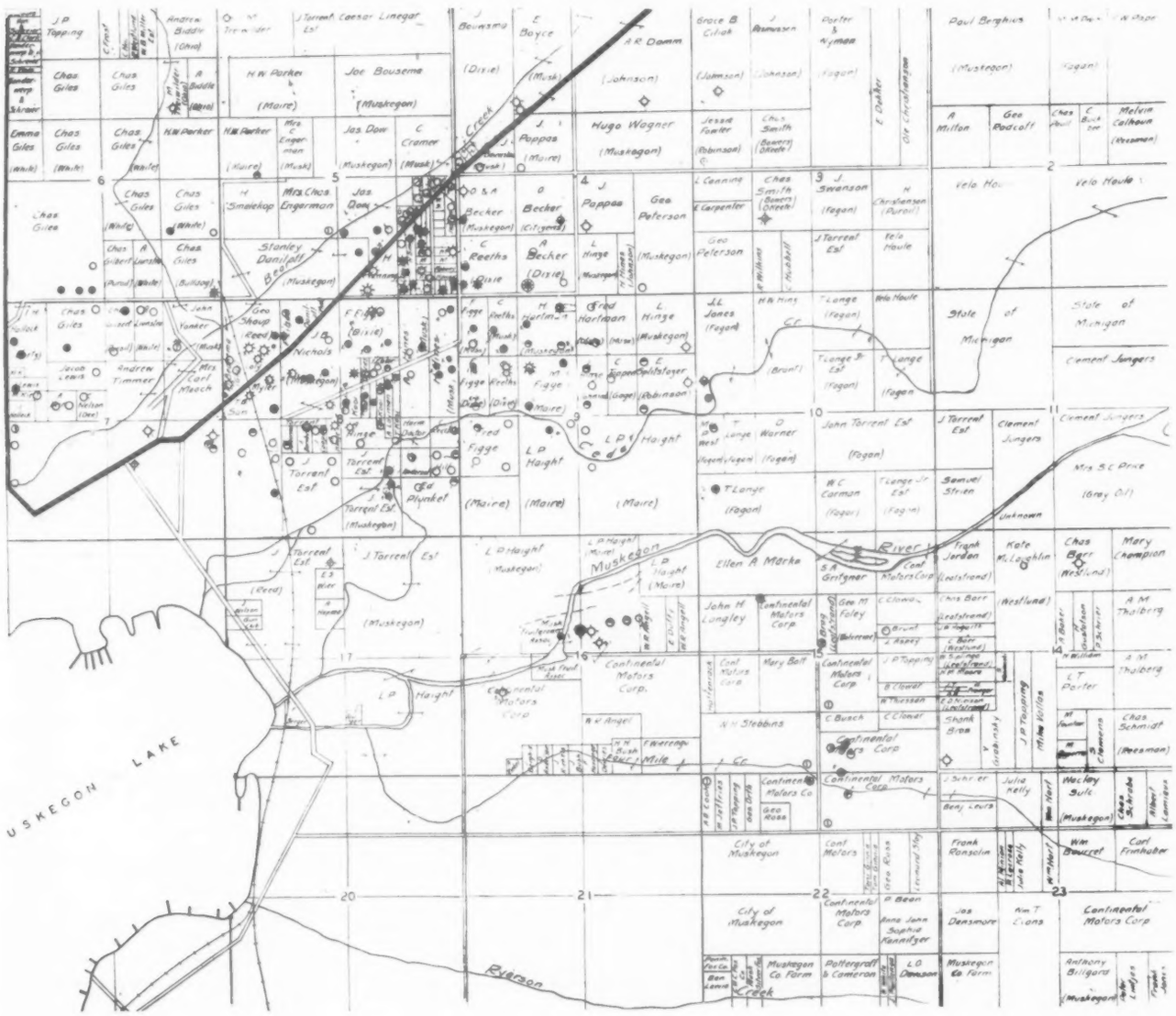
manded a price in line with the figure paid for crude in the Mid-Continent.

On the average, a well in the Mount Pleasant field requires an expenditure of from $18,000 to $22,000, and can be drilled in about 60 days. Of this time, the first 1200 feet require 30 days because of the glacial drift; while the remaining 2300 feet can be completed in a like period.

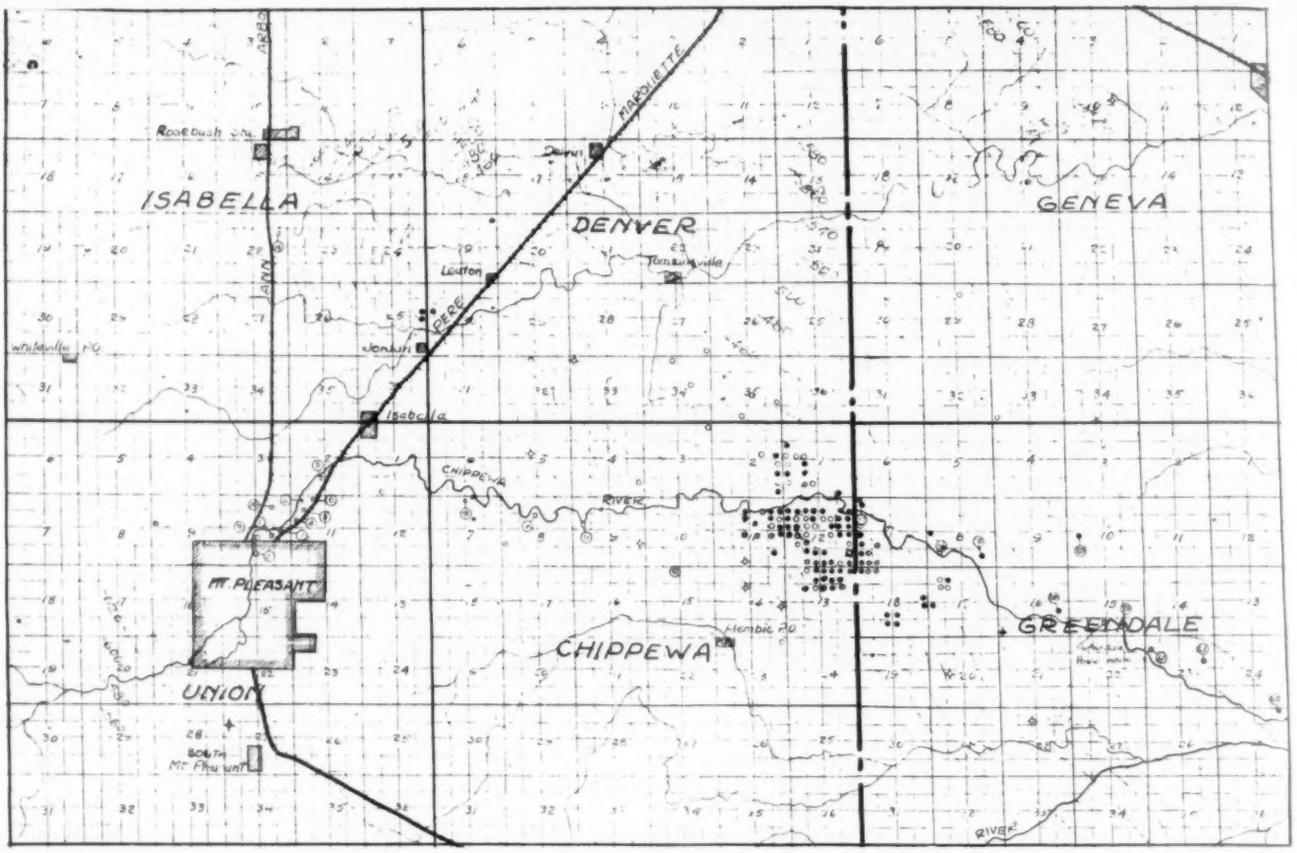
For the most part 8¼-inch casing is set through the Marshall brine and red rock, and six-inch from that point to the Dundee. Standard drilling rigs are used and standard steel 84-foot derricks predominate. Gas engines are used except in the case of isolated wildcat tests where steam is employed.

Acreage

Approximately 15 operators presently hold acreage in the field, of which Pure Oil Company holds the largest plots in proven areas. Other companies operating include; Stork Oil Company, Sias Company, Ohio Producers and Refiners Company, E. Brown Development Company, Wittmer Oil & Gas Company, Pennsylvania Oil & Gas Company, and Leonard Petroleum Company. The remaining rep-



Muskegon Field



Mount Pleasant Field

resent individuals or groups of individuals operating locally.

Gas in Marshall Formation

The McKay-Mercier gas well, recently completed in Claire County for 3,800,000 cubic feet in the Marshall or Napoleon sandstone, may lead to the development of gas field in the Marshall formation. Additional impetus was given this hope by the recent large and unchecked flow of gas from Sias Oil Development Company's Frank Muma 1, SW NW Section 2-14n-3w, Chippewa Township, Isabella County. Gas was struck in this well at 1145 feet in the Marshall formation, with an initial flow estimated at 1,500,000 cubic feet. On deepening to 1160 feet the gas production was doubled; but the flow of salt water at this point made it impossible to produce it at this depth. J. M. McKay owns several thousand acres in fee in Clare County where new tests are being planned with a view to extending the limits of this potential gas field.

The Sias well is north of the proven Mount Pleasant field in the general direction of the McKay-Mercier well, which has since been capped and permit taken out for the drilling of McKay 2, also in Grant Township. While still another Claire County wildcat test was recently started near the village of Claire.

In the proven Mount Pleasant field, gas has not been encountered in the Dundee formation except in quantities sufficient to flow the oil freely.

In Mason County a 2,000,000 cubic foot gasser was recently brought in just below the drift. Another well is being drilled just west of the producing well in Grant Township; while three other wells by other operators are being drilled below 3600 feet.

New York Petroleum Royalty Corporation, which is drilling a wildcat in Denver Township, Isabella County, has purchased 100,000 acres of leases scattered throughout the Claire-Mount Pleasant area. Iona-Montcalm Development Company's A. A. Herrick 1, NE NE Section 14-15-9, Bushell Township, Montcalm County, is drilling in the lower Traverse at 2915 feet; plans call for drilling to the Dundee. St. Clair Oil & Gas Company's O. L. Hubbard 1, SW SE Section 14-2s-6w, Marshall Township, Calhoun County, near the city of Marshall, is drilling at 1700 feet.

Western Michigan

In Western Michigan the most promising wildcat is the C. E. Moe well near Ravenna, Ottawa County, which is drilling in the Utica shale above the Trenton limestone, more than 4900 feet deep. A flow of gas estimated at 250,000 feet was struck above the Utica shale, and continues in undiminished volume. Another deep test is the Wright Oil Company's No. 1, SW NW Section 10-8-13, Wright Township, on the property of Joseph Kluting, near Conklin; it is drilling at about the same depth as the Moe well, but is in a lower structure. And finally the Edward DuVall Shultz 1, NW NW, Section 12-15n-18w, Golden Township, Oceana County, struck gas at 1630 feet in the upper Traverse. Natural gas struck at the Moe well upon test proved to be of better quality than the product from the Muskegon field; it had a B.t.u. content of more than 1300, a gasoline content of 1.25, and a gasoline gravity of 89. It is a sweet gas with no trace of sulphur as is found in the Dundee gas of the Muskegon field.

Muskegon Field

The Muskegon field is an oblong area four to five miles in length and from a half mile to a mile in width. It is located in the northwest part of Muskegon Township and the adjoining northeastern part of Laketon Township, Muskegon County. The limits of the field are well defined by dry holes drilled at the edges of the proven area.

As of December 9, 1929, 330 wells had been drilled or are drilling in Muskegon township and 193 in Laketon township, or a total of 523 for the field. Of this total, 60 have been dry holes, 42 have been abandoned, 36 have been gas producers, and nine are drilling.

Of the wildcat tests in Muskegon County, 21 have been dry holes, four have been abandoned, one completed and one shut down. While in Western Michigan, including Newaygo, Oceana, Ottawa, and Kent Counties, a total of 57 wildcat tests have been made or are presently drilling. Of this total, but one producing well has been completed, 23 have been dry holes, three have been abandoned, 12 have been shut down and eight are drilling.

Prior to 1928, the only show of oil in Michigan was that which was developed in the Saginaw field in 1926 and 1927. Then came the discovery of oil near Mus-

kegon; and the development that followed in the ensuing two years brought in some of the best wells east of the Mississippi River.

However, the development was really started more than 50 years ago with the drilling of three salt wells on the southern shore of Muskegon Lake. Oil was found in each of these old wells, but they were plugged and abandoned because of the absence of salt. The logs of these wells, while not adequate and accurate, were the basis upon which deductions about the potential pool, were placed.

These logs were sufficient to guide Dr. A. C. Lane, a former state geologist, in making observations that the formations were rising along Muskegon Lake on a line with the three wells. These observations of Dr. Lane were later published by the then state geologist, R. A. Smith, which published data was available to Stanley Daniloff, the man who organized the Muskegon Oil Corporation, and subsequently brought in the discovery well in the upper pay sands of the Traverse lime formation at 1625 feet on December 15, 1927.

For many months thereafter, drilling operations centered around the discovery well, and drilling was to the Traverse pay. Then came the discovery of oil and a large amount of gas in the Dundee formation at about 2050 feet by Dixie Oil Company, a subsidiary of Standard Oil Company (Indiana). Developments spread quickly and by the end of 1928 more than 85 oil wells and 35 gas wells were brought in in Muskegon and Laketon townships.

Oil wells in the Muskegon field have been brought in with an initial production of from five to 3000 barrels daily, while the dry gas wells have had an open flow capacity gauging from 1,500,000 to as high as 25,000,000 cubic feet a day.

In order to handle the oil production from the field, Dixie Oil Company erected three 1500-barrel storage tanks on property near the Pere Marquette tracks. Later an additional storage of 80,000 barrels was added.

Later three other pipe lines were built. They were: the Simrall Pipe Line Corporation, a subsidiary of the Shell Petroleum Corporation, which handled the output of the Muskegon Oil Corporation and associated companies, hauling the oil by barge to Lemont, Illinois; the Independent Pipe Line, owned by the Wellman Oil Company, which was shipping the crude by rail to the Henry H. Cross refinery at Joliet, Illinois; and the pipe line of Westlund & Whitehead, Inc., who were shipping oil to Paragon Refining Company at Toledo, by rail.

Dixie Oil Company is moving crude by tank car; Simrall Pipe Line has been leased by the Old Dutch Refining Company, and crude is being pumped to the company's refinery near Muskegon; the Westlund and Whitehead line has been leased by the Michigan Central Refining Company; and Independent Pipe Line is being used to transport oil to the recently completed refinery of the Henry H. Cross Company, near Muskegon.

Oil from the upper Traverse formation in the Muskegon field varies in gravity from 36 to as high as 42, while oil from the Dundee has tested from 38 to 40 corrected to 60 degrees. Crude from the Traverse is of excellent quality, while much of the crude from the Dundee contained a large amount of sulphur. At one time this objectionable feature reduced the market for this crude and was said to be responsible for the reduction in the price from $1.26 to 50 cents per barrel. Later, however, the average price was paid, and production was immediately accelerated.

Drilling Practice

Completed wells in the Muskegon field brought in in the Dundee sand cost approximately $10,000 and require from 20 to 30 days of drilling. Wells completed in the Traverse cost from $6000 to $7000, and require from 15 to 20 days drilling. Both standard and portable rigs are used in this field, and standard 84-foot derricks predominate. Among the wildcat tests, portable rigs have been employed, and 60-foot derricks are used.

Some of the better known companies operating in the field include: Dixie Oil Company; Johnson Oil & Refining Company; Ohio Oil Company; Ohio Producing Company; Muskegon Oil Corporation; Lima Oil Corporation; Red Oil Company; East Ohio Oil & Gas Company; Laketon Oil Company; Swastika Oil & Gas Company; United Petroleum Company; and many purely local companies representing Muskegon, Grand Rapids and other cities.

While the only wildcat now drilling in Muskegon County outside Muskegon and Laketon township, was dry at 2250 feet, indications point to the possibility of oil at greater depths.

Small shows of oil have been encountered in the Berea sands at between 1100 and 1200 feet; then the two known producing sands—the Traverse and Dundee—are encountered at 1900 and 2100 feet, respectively; and finally there are indefinite plans for a deep test to the Niagara, the Clinton or the Trenton formations. It is upon what may be found in these lower sands and upon the extension of the field in the upper formations that the future of the Muskegon oil field now depends.

Late in November operators met to discuss the best plan of obtaining a deep test on structure in the field. At that time they decided to co-operate with an existing company to raise dry hole money rather than to form a new company. When this test will be made was not known, but indications point to a delay until after the forst of the winter weather has passed.

Dixie Oil Company's storage and loading rack in the Muskegon field

Formulae for Acid Bottle Determinations *In Crooked Hole Tests*

By ALEXANDER B. MORRIS

With recent active interest in crooked holes there has arisen a need for some formulae by means of which acid bottle determinations can be quickly interpreted.

The interpretation thus far, generally desired, is to determine the total horizontal movement of the well, without regard to orientation, as though it all took place in the same vertical plane. This gives what might be called a development of the well, as the unrolling of a cylinder or a cone is said to give a development of tracings on its surface.

Since this sort of chart is desired, it can be readily prepared by means of the standard railroad curve formulae familiar to every engineering student, the only debatable assumption being that the various slopes of the well as recorded by the acid bottle are connected by circular curves in the plane of development. The errors of this assumption are probably well within the limits of error of the observations. Such a chart will show of course not only the horizontal displacement of the hole but the true vertical depth to the points at which the observations were taken. In the following formulae, which have been adapted from the railroad curve formulae $e_1e_2e_3e_4$ etc., are the measured readings of length of curve, or depth of well, $D_1D_2D_3D_4$ etc., are the angular deviations from the vertical as revealed by the acid bottle, $V_1V_2V_3V_4$ etc., and $H_1H_2H_3H_4$ etc., are respectively the true vertical depths and horizontal displacements corresponding to the several readings $L_1L_2L_3L_4$, $R_1R_2R_3R_4$, $\Delta_1\Delta_2\Delta_3\Delta_4$ etc., are auxiliary values used in the operation.

First Reading:

$$L_1 = e_1 \qquad V_1 = 2R^1 \sin \frac{\Delta_1}{2} \cos \frac{\Delta_1}{2}$$

$$\Delta_1 = D_1 \qquad H_1 = 2R_1 \sin^2 \frac{\Delta_1}{2}$$

Second Reading:

$$L_2 = e_2 - e_1 \qquad V_2 = 2R_2 \sin \frac{\Delta_2}{2} \cos \left(D_2 - \frac{\Delta_2}{2} \right) + V_1$$

$$\Delta_2 = D_2 - D_1 \qquad H_2 = 2R_2 \sin \frac{\Delta_2}{2} \sin \left(D_2 - \frac{\Delta_2}{2} \right) + H_1$$

Third Reading:

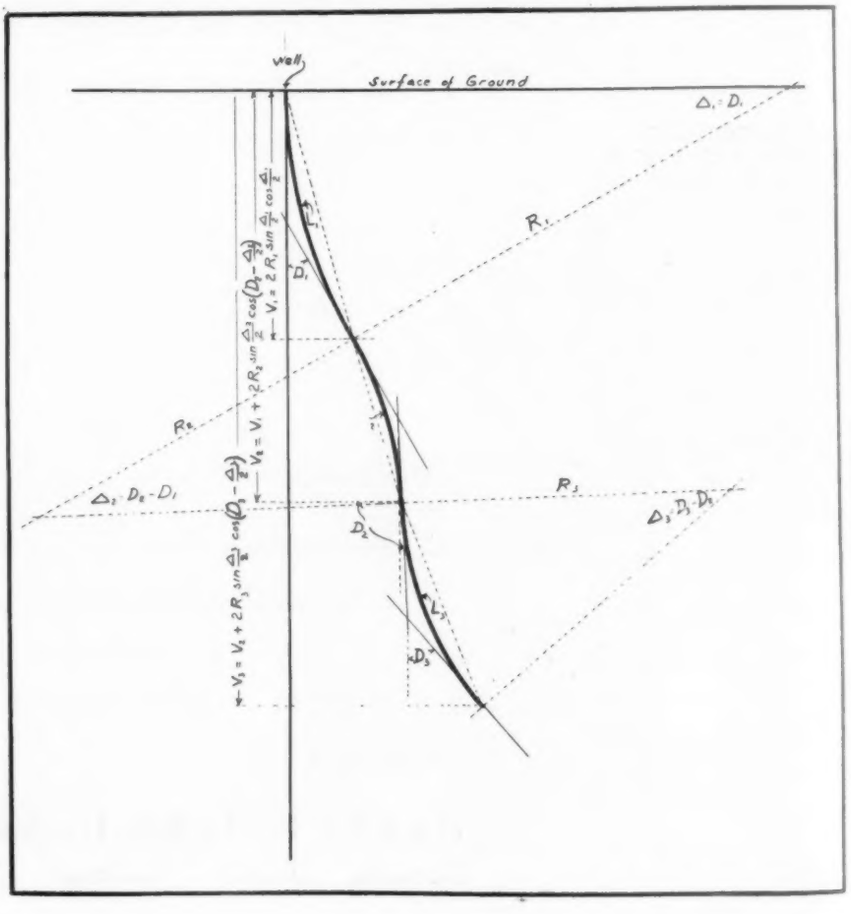
$$L_3 = e_3 - e_2 \qquad V_3 = 2R_3 \sin \frac{\Delta_3}{2} \cos \left(D_3 - \frac{\Delta_3}{2} \right) + V_2$$

$$\Delta_3 = D_3 - D_2 \qquad H_3 = 2R_3 \sin \frac{\Delta_3}{2} \sin \left(D_3 - \frac{\Delta_3}{2} \right) + H_2$$

Subsequent reading may be written off from the above expressions.

Having obtained any set of readings e, D, it requires only about five minutes figuring to arrive at the corresponding values for V and H. If the measurements are taken in the course of drilling a chart of the well can thus be readily kept and log corrections currently made on the derrick floor.

The accompanying sketch illustrates the method of adapting the railroad curve farmulae to this use. These may be found in the back of almost any surveyor's field book, and are as follows: radius, $R = \frac{50}{\sin \frac{D}{2}}$ wherein D is the dergee of curve and $\sin \frac{D}{2} = \frac{50}{R}$ In this connection we are not interested in the degree of the curve and so eliminate this by combination with the expression for the length of curve, $L = 100 \frac{\Delta}{D}$ in which Δ is the central angle. We thus arrive at $R = \frac{50}{\sin \frac{50\Delta}{L}}$. The long chord or the straight line from the point of one observation to the point of last observation is $2R \sin \frac{\Delta}{2}$. The expression for the vertical depth and horizontal displacement at any point is the sum respectively of cosines and the sines of the angles of inclination of these long chords, with the chords as they radii.



Time Saving . . . Profit Saving . . . Longer Life . . . Faster, Steadier Production with equipment operating on . . .

HYATT

ROLLER BEARINGS

PRODUCT OF GENERAL MOTORS

Wherever installed on wheels, drives, shafts, gears, and motors, smooth rolling Hyatts transmit power without effort or waste. Practically frictionless, they avoid the sticking and drag of plain bearing surfaces.

Equipment lasts longer when rugged Hyatts are employed. Immunity from bearing breakdowns insures faster, smoother production. Attention is confined to infrequent lubrications. Labor and maintenance costs are negligible.

Throughout all oil field applications, as in railroad, automotive, mining, manufacturing and agricultural equipment, engineers have found that the Hyattway is the Saving Way.

The Hyatt Roller Bearing with outer race cut away to show construction of roller assembly. Our engineers will gladly submit bearing designs for any application in which you are interested.

HYATT ROLLER BEARING COMPANY

Newark Detroit Chicago Pittsburgh Oakland

Effective Lubrication Essential for Wire Rope in Field Service

By H. L. KAUFFMAN

THE life of a wire rope is measured by the life of the core which, in the majority of cases, is of hempen fibre. Hempen fibre, being of vegetable origin, is subjected to comparatively rapid physical and chemical deterioration, especially when in use and particularly so when in use in corrosive or deteriorating elements.

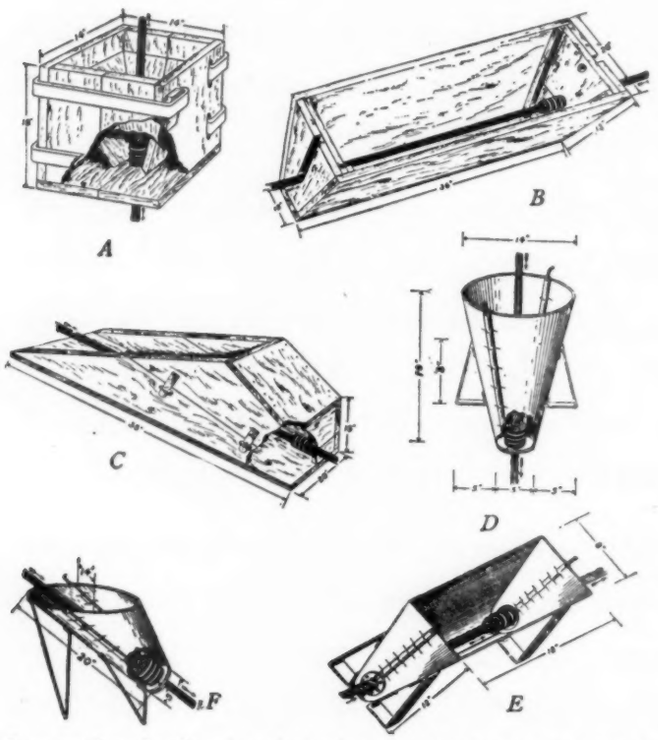
Physical deterioration of the hempen core commences with the beginning of service, as even an axial stress on the rope causes compression of the core—thereby forcing out some of the core lubricant. Combine axial with bending stresses and the core is compressed to a much greater degree, and at the same time, subjected to the chafing of the steel strands sliding on the core to accommodate the radius of the curve and then sliding back to straightened position when leaving the sheave or drum. Combine now these high compressive stresses and chafing of the core with the action of briny sulphurous fluid from the well and some idea of the necessity of a lubricant and preservative for both the hemp and steel is seen.

Lubrication plays an exceedingly important part in the life of a wire rope, and to see if it is being accomplished satisfactorily the following three places should be examined:

1. The core should be examined for external (surface) lubrication both as to kind and amount. If there is very little or no lubricant on the core, there is no protection for core deterioration from rusty strands, as this lubricant protects both the core and the strands.

2. The core should be examined for internal lubrication. If there is practically no internal lubrication, moisture will penetrate the fibres throughout the rope and cause rapid deterioration.

3. The steel strands should be examined for lubrication, both as to kind and quantity. This is particularly important for ropes used in briny or sulphurous fluids. When there is practically no lubrication, rapid rusting will result in rapid deterioration of steel and core. A rusty rope frequently loses its elasticity and often breaks under sudden application of load.



Construction details of typical wire rope lubricating and treating boxes. A, B and C are of wooden construction; A to treat a vertical rope, B a horizontal rope, and C a rope located at an angle. D, E and F are similar boxes of metal construction. Illustration courtesy of The Texas Company

That lubricating wire rope adequately advisable is shown by the following incident:

A Case in Point

Not so very long ago a very rusty 20-foot piece of a ⅞-inch left lay driller, considerably worn, was returned to the factory for examination. Two adjoining pieces were cut from this sample and socketed for a breaking strength test. The pieces cut off were each six feet long.

One sample was left in the rusty condition in which it was received; the other was thoroughly oiled in a thin engine oil. Upon testing, the following results were obtained:

	Ultimate Strength Lbs.	No. Strands Broken	Stretch Pct.
Rusty	29,700	2	0.98
Oiled	40,840	3	1.45

These tests showed that there was obtained an increase of 37½ per cent in strength and of 48 per cent in elongation of the rope, due only to the application of a medium engine oil.

It is just as unreasonable to run an automobile or hoisting engine without addition to the initial lubrication, as to expect the factory lubrication of a wire rope to last throughout the life of the rope.

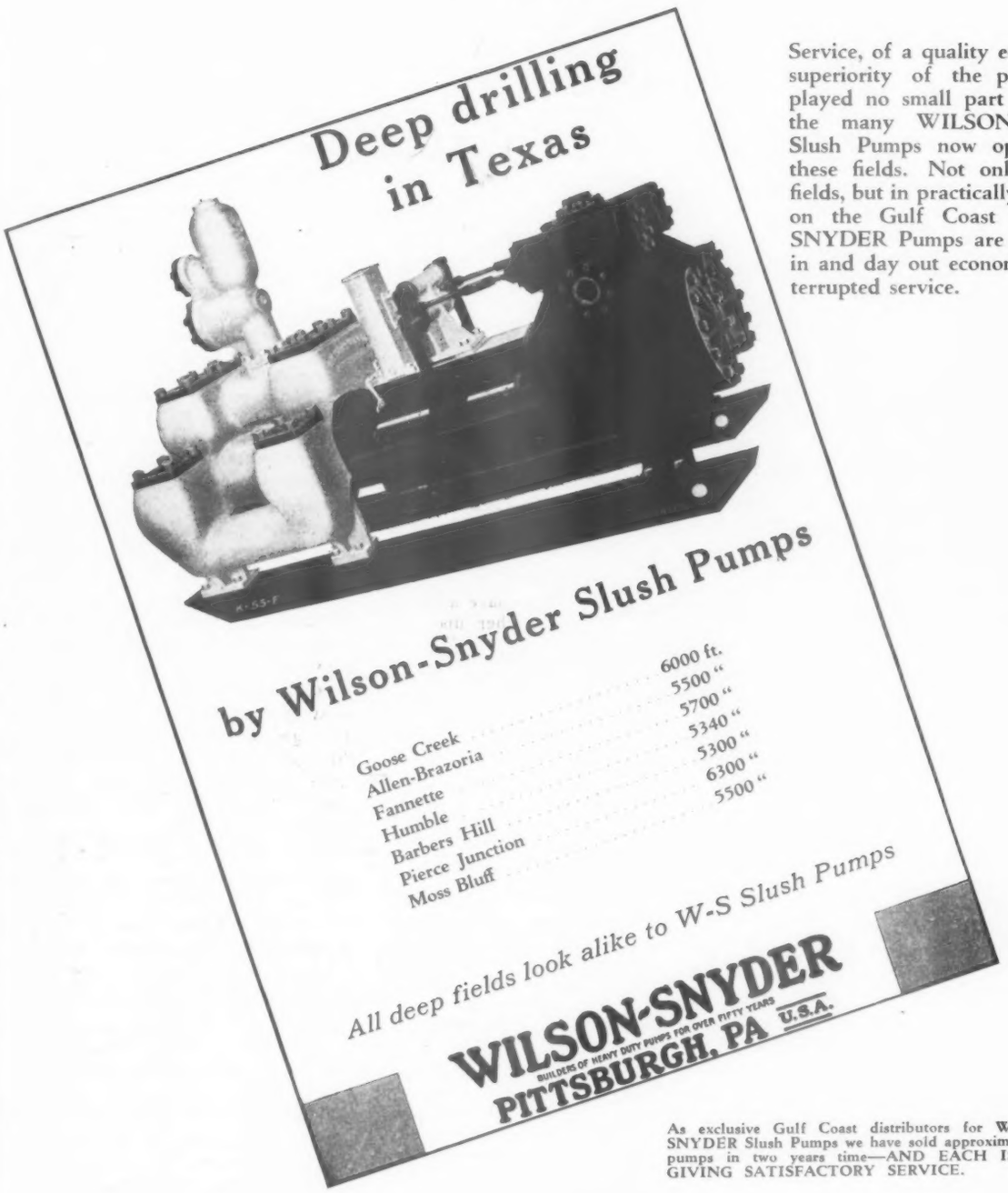
Wire rope cores are specially treated at the cordage factory for internal lubrication and preservation. These are then run through a bath of heavy hot preservative while laying into the finished rope. This lubricant should not be considered as an indefinite supply from which to draw long, but frequent applications of lubricant are necessary for prolonged life of the rope.

Failure to lubricate wire ropes, particularly those in corrosive elements or under severe stress or bending conditions, will cause an early exhaustion of the core preservative and rapid deterioration of the core.

For most field lubrication, where cold application only is practical, a lighter penetrating commercially chemical neutral oil is best. Do not use crude oil or the like, as they are chemically injurious to the core and steel in the rope.

Some tests made in 1890 by Biggar

A Good Product *plus* Good Service Does It!


Deep drilling in Texas
by Wilson-Snyder Slush Pumps
Goose Creek 6000 ft.
Allen-Brazoria 5500 "
Fannette 5700 "
Humble 5340 "
Barbers Hill 5300 "
Pierce Junction 6300 "
Moss Bluff 5500 "
All deep fields look alike to W-S Slush Pumps
WILSON-SNYDER
BUILDERS OF HEAVY DUTY PUMPS FOR OVER FIFTY YEARS
PITTSBURGH, PA U.S.A.

Service, of a quality equal to the superiority of the product has played no small part in placing the many WILSON-SNYDER Slush Pumps now operating in these fields. Not only in these fields, but in practically every one on the Gulf Coast WILSON-SNYDER Pumps are giving day in and day out economical, uninterrupted service.

As exclusive Gulf Coast distributors for WILSON-SNYDER Slush Pumps we have sold approximately 200 pumps in two years time—AND EACH IS STILL GIVING SATISFACTORY SERVICE.

WILSON SUPPLY COMPANY

1412 Maury St.
Houston Texas

OIL AND GAS WELL SUPPLIES

BRANCHES
Beaumont, Luling, Texas

show very conclusively the value to rope from lubrication, so that some of his results are quoted below:

Sheave Diameter	17.5d	42d	Ratio by Diams
Dry rope	16,000 bends	74,000 bends	4.6
Lubricated rope	38,700 bends	386,000 bends	10.
Ratio by condition	2.4	5.2	...

These tests were made with 9/16-inch 6 x 19 plow steel rope, and run until each sample had the same number of broken wires. The foregoing table shows the very practical value of applying lubricant to wire rope, especially with smaller sheaves. Similar tests have been made on fatigue machines during the last decade by at least two manufacturers in this country, so that the tests cited can be taken as indicative of practical service relations.

It has been noted that a rusty rope, such as a cable tool drilling line, will frequently break one strand upon a quick jerk under conditions that would not so affect a lubricated rope. It has been further noted that a wire rope loses both strength and elasticity in actual service conditions when it becomes "rust bound," and a perceptible crackling noise can be heard when such a dry rusty rope is bent by hand. The rust on the wires next to the core acts as an added abrasive, more rapidly chafing the core. When the core has deteriorated or been compressed in use to the extent that the steel strands bind against each other, then a dangerous nicking condition exists—a condition that will cause a very rapid breaking up of the wires in bending or a rope failure from a heavy or a quick pull, due to the loss of elasticity.

The foregoing no doubt will give more force to the initial statement that the life of a wire rope is measured by the life of the core; and that lubrication is the logical means for preserving and prolonging the life of the core.

Length of Time Initial Shop Lubrication Will Last

The question of how long the initial lubrication will last is a matter of judgment influenced by various factors. No fixed rule can be laid down. If the rope is used immediately upon receipt from the factory, then the conditions of service will largely determine how soon the rope should be lubricated. If the rope is used mainly in the hole as a cable tool drilling line or swabbing line, etc., the fluid will have some bearing. If the fluid is briny or sulphurous it would be advisable to lubricate within two or three days after installation of the new rope. This is also true for a rotary line due to heavy duty, high speed and severe bending. Additional lubrication for such ropes should be once or twice a week, depending upon the severity of the service. The heavier the duty, the greater the number of small bends, the higher the speed of operation or the more deteriorating the fluid, the more frequent the lubrication. If a rope remains pliable with evidence of lubricant in the "valleys" or crevices between strands, it does not require such frequent lubrication.

If a rope is held in storage for considerable time, it is advisable to lubricate during installation of the rope.

Means for Lubricating Wire Rope on the Rig

It is considered more practical and economical to lubricate a rope without taking it from the rig. There are several simple appliances for doing this. In lubricating a cable tool drilling line, for instance, a box of one-inch lumber about 12 inches square and 30 to 36 inches high is made, having a bottom but no top. A hole the size of the rope is bored in the center of the bottom and the box is then sawed in half from top to bottom, so that it can be placed around the rope just after the tools have entered the hole. The two halves can either be bolted or tied together, the box filled with lubricant, and the tools slowly lowered down the hole. It is a very simple, but quite effective lubricator.

What Lubricant to Use

Almost any oil is better than none, but some are decidedly better than others. The oil used should not have a deteriorating chemical effect either upon the core or upon the steel wires. For this reason, neither crude oil nor kerosene is advisable. A cheap medium engine oil is most handy, though several concerns specialize in commercial chemically neutral rope oils of various consistencies. A medium grade compound should be employed for cold application; for, though a hot heavy compound is best under proper conditions of application, better penetration will be obtained under most field conditions from a medium oil applied without high heat. If the oil can be warmed without risk at the rig, so much the better.

Effect of Storage

A wire rope could be laid up in a lubricant in the shop so that it could be kept in sheltered ventilated storage for several years. However, such a protective coating would be objectionable to handle by the user and, consequently, oil field ropes are scarcely ever so heavily externally lubricated. The internal lubrication of oil field ropes should be such, however, that the rope could be stored in a sheltered ventilated store house with only a surface oiling perhaps twice a year to prevent surface rust and to renew the lighter oil that summer heat may have volatilized. If stored outside, the reel should be set up at least a foot off the ground on blocks; grass and weeds kept clear and the entire reel covered by waterproof tar-paper or corrugated sheet iron. Such rope should be examined every three months for indications of surface rust and oiled with a brush if necessary. This rope, then, should be thoroughly lubricated during installation, as the core lubricant is apt to be somewhat "dried out" by summer heat and the rope is liable to take a more pronounced set in the shape it is wound on the reel—a condition that fresh oiling will greatly aleviate.

Bureau Reports Progress On Shale Utilization

Washington, D. C.—The Bureau of Mines is continuing its investigations regarding the mining and retorting of oil shale at the experimental mine and oil shale plant (on naval oil-shale reserves Nos. 1 and 3) near Rulison, Colorado, it is shown by the annual report of the bureau, just submitted to Secretary of Commerce Lamont.

This work is a continuation of that begun in 1925, when two retorts, one of Scottish and the other of American design, were erected at the plant site. The purpose of the work was to study problems connected with mining oil shale and retorting the shale in representative, but fundamentally different, types of retorts. During the past year, valuable information was obtained on the mining of oil shale, including some data as to costs of mining, the most effective spacing and depth of drill holes, and the best explosives to use. The retorting experiments included charging the retorts under various rates and conditions of throughput and temperature-control, to determine their effect on the quantity of oil produced. It was demonstrated that the American type of retort in use at the plant will handle, under controlled conditions, almost any shale, whether rich or lean, coking or noncoking. The experimental oil-shale plant was closed on June 30, 1929. The data which have resulted from this experimental program should assist materially in answering many questions regarding the feasibility of an American oil-shale industry, and under what conditions of supply and demand it might be economical to produce shale-oil products in competition with other sources of liquid fuels and lubricants. During the year, two papers were published giving a preliminary review of the work accomplished at the experimental oil-shale plant, and a bulletin has been written giving the complete results of the experimental work in 1926 and 1927. Another bulletin is in preparation which will describe the work in 1928 and 1929.

Samples of the shale oil from the various runs of the retorts have been sent to the Boulder, Colorado, shale-oil laboratory, where tests have been made in an experimental refinery. The topped, crude shale oil was cracked at various pressures, to determine that pressure which will yield the highest percentage of motor fuel. Experiments were made to develop processes for treating the cracked distillates with concentrated sulphuric acid and other chemicals, in order to obtain motor fuels suitable for commercial use. Gasoline has been produced at Boulder which was white in color, stable in character, of good odor, and which conformed to federal specifications for motor gasoline.

"OILWELL" Rotary Swivels Turn Freely Under The Heaviest Loads

Waste and wear have been outlawed by the Oil Well Supply Company, Pittsburgh, Pa., in oil field equipment manufactured by them.

Timken has furnished the weapon by which these enemies of economical production are held at bay.

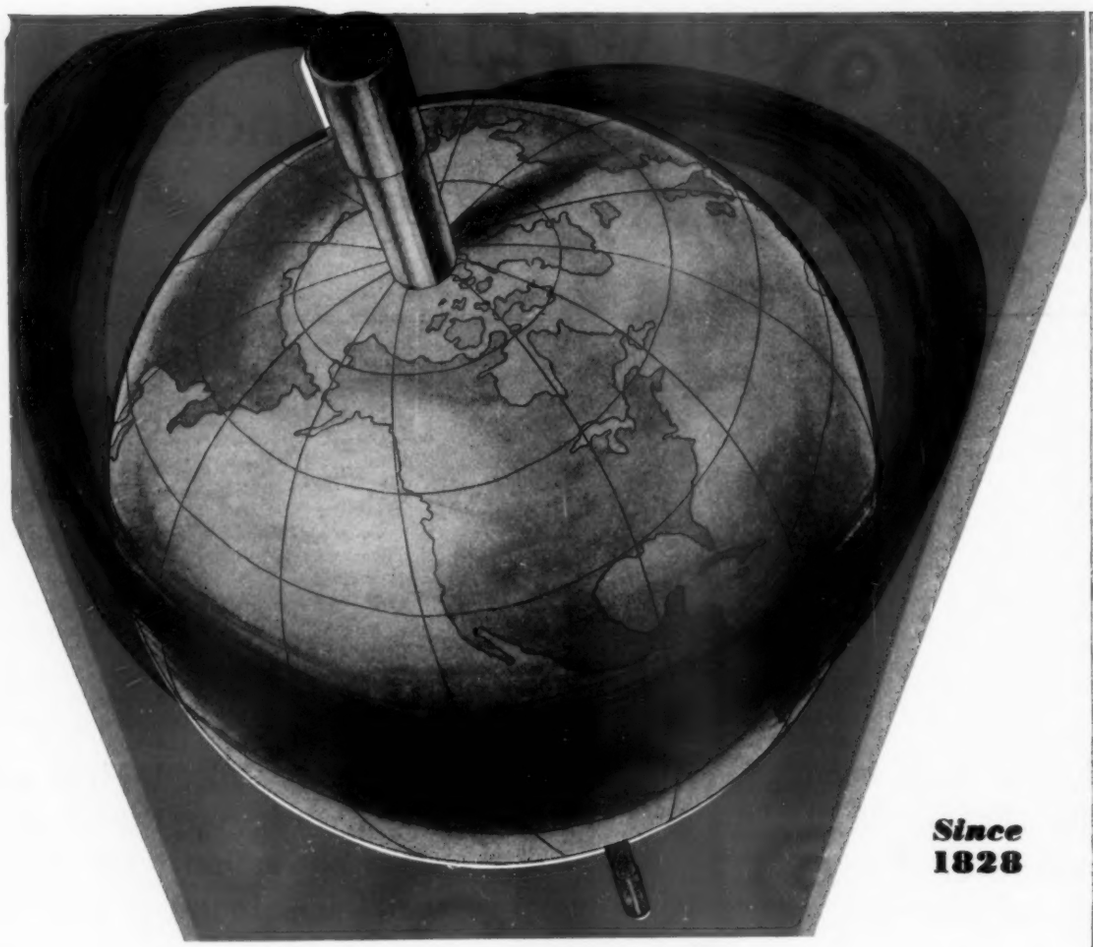
The "Oilwell" Oilbath Rotary Swivel is a case in point.

Deeper drilling is imposing vertical loads of increasing severity on rotary swivels, tending to hamper turning freedom and placing an added drag on the rotary table power unit; but "Oilwell" has found a way to master the situation . . . in the exclusive combination of Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken steel.

With friction counted out, lubrication fades from the production cost picture and wear is rendered powerless. Weight, shock and speed are held scoreless and maintenance costs smashed to atoms.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**



Since 1828

The Oil World Accepts

STANDARD SEAMLESS

CASING TUBING DRILL PIPE *(Regular and Heat Treated)* LINE PIPE STILL TUBES

Sizes 2 inch to 13⅜ inch O. D.

SPANG

WELDED

STANDARD PIPE CASING TUBING LARGE O. D. PIPE LINE PIPE

DRIVE PIPE DRILL PIPE *Sizes ⅛ inch to 24 inch O. D.*

SPANG, CHALFANT & CO., INC.

General Offices: CLARK BUILDING, PITTSBURGH, PA.

Sales Offices: CHICAGO, ILL. NEW YORK, N. Y. ST. LOUIS, MO PITTSBURGH, PA. TULSA, OKLA. LOS ANGELES, CAL.

Welded Mills: ETNA, PENNA. SHARPSBURG, PENNA. *Seamless Mills:* AMBRIDGE, PENNA.

Markets--Production--Crude Prices

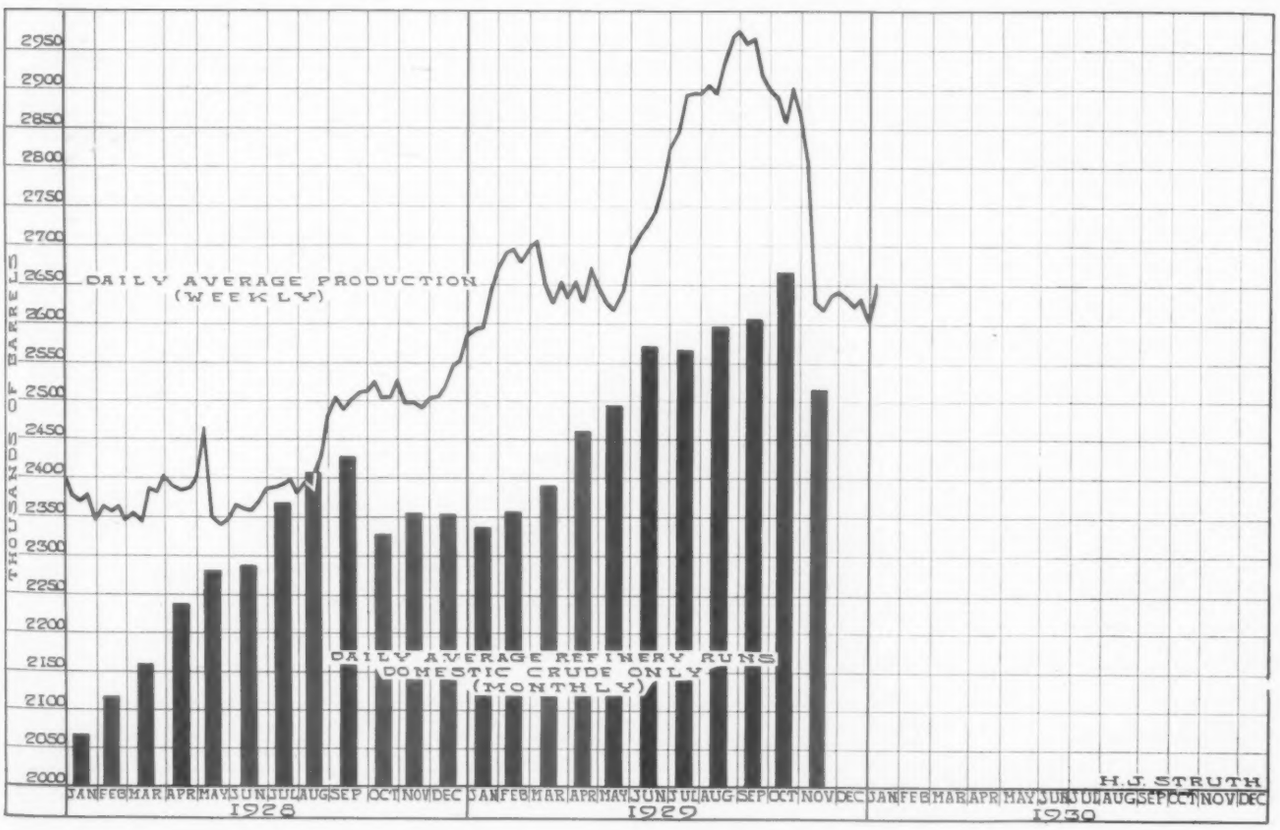
H. J. STRUTH, *Staff Economist, Houston, Texas*

Sharp Production Gain Marks Turn of New Year

A SHARP upturn in the daily average production curve last week started the new year with a rather unfavorable turn. Returns received by the American Petroleum Institute for the week ending January 4, indicate that daily average production increased 44,600 barrels over the preceding week, reaching a total of 2,652,000 barrels. While increases were general during the past week, the chief reason for the sharp upturn in production is attributed to Oklahoma where the daily average increased 28,350 barrels. At the same time, California and the Rocky Mountain states contributed material gains of 11,100 barrels and 6550 barrels, respectively. Texas and Arkansas were the only states reporting declines in production, the former recording a decrease of more than 4000 barrels. While last week's upturn is not regarded as the forerunner of the immediate future trend of production, it nevertheless, serves as an ominous warning to the industry that should not fail to be heeded.

Now is the time for the producing branch of the industry to give careful study to the probable crude requirements for this year, and endeavor to lay the foundation for a production schedule that will prevent the possibility of another period of overproduction. It is obvious that stringent measures must be applied, particularly to such fields as Oklahoma City, Earlsboro and Santa Fe Springs, since these areas are proving a constant menace to the industry. Operators in these fields have, of course, agreed to lend wholehearted support to necessary proration, but even so the difficulties encountered show that the task of holding back the enormous potentialities of these areas is an extremely difficult one. Although remarkable results have been obtained during the latter part of last year in prorating the production of these and other critical areas, it is a well known fact that the situation is still far from being in a satisfactory condition. It is therefore apparent that the time has not arrived to become optimistic over the outlook for a greater demand. In another article, appearing in this issue, it has been pointed out that there

DOMESTIC PRODUCTION AND REFINERY RUNS



CRUDE RUNS TO STILLS, GASOLINE AND GAS AND FUEL OIL STOCKS, WEEK ENDED DECEMBER 28, 1929

(Figures in barrels of 42 gallons)

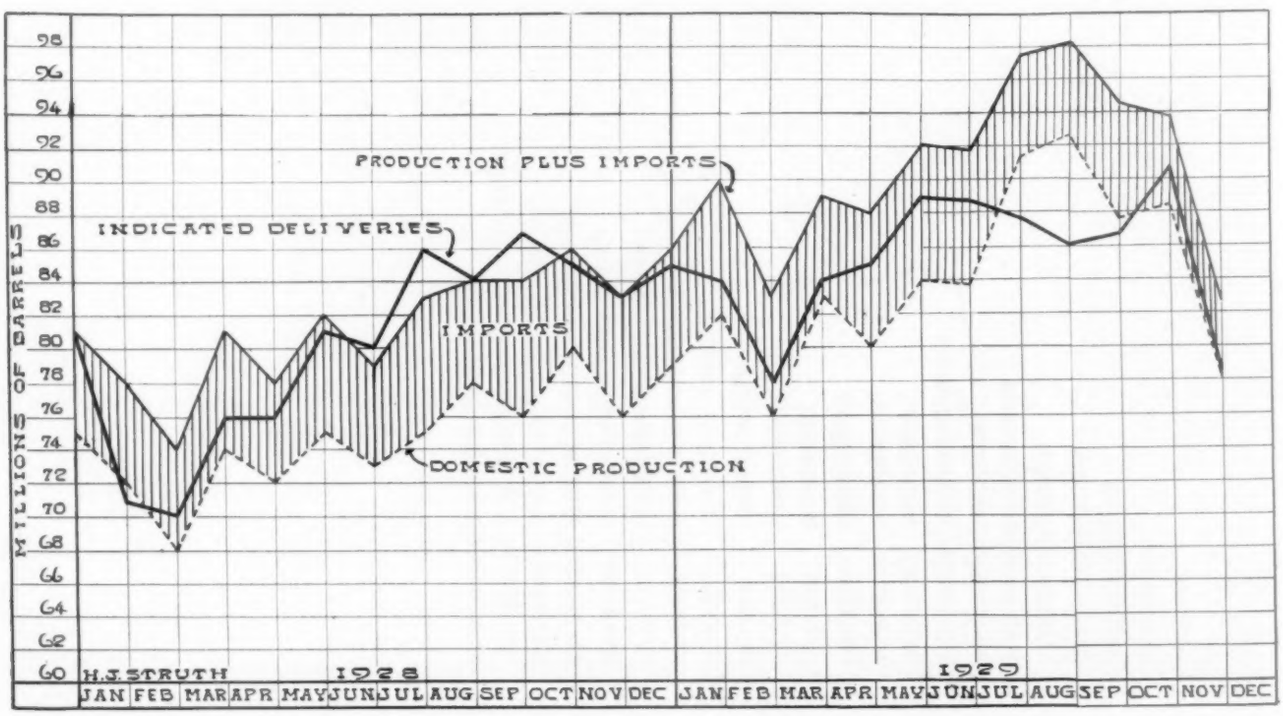
District—	Potential Daily Capacity	Potential Capacity Reporting Total	Potential Capacity Reporting Per Cent	Crude Runs to Stills Total	Crude Runs to Stills Daily Average	Crude Runs to Stills Per Cent Operated	Gasoline Stocks	Gas & Fuel Oil Stocks
East Coast	605,700	605,700	100.0	3,363,500	480,500	79.3	6,140,000	7,836,000
Appalachian	128,100	117,600	91.8	549,900	78,600	66.8	1,267,000	795,000
Indiana, Illinois, Kentucky	360,000	355,000	98.6	1,975,300	282,200	79.5	4,975,000	3,523,000
Oklahoma, Kansas, Missouri	462,200	409,700	88.6	2,018,300	288,300	70.4	3,538,000	3,401,000
Texas	775,800	703,500	90.7	3,678,700	525,500	74.7	6,692,000	14,135,000
Louisiana-Arkansas	300,600	292,000	97.1	1,274,000	182,000	62.3	1,978,000	4,848,000
Rocky Mountain	148,900	139,300	93.6	351,000	50,100	36.0	2,193,000	1,008,000
California	897,400	891,400	99.3	4,578,500	654,100	73.4	15,177,000	109,606,000
Total Week December 28	3,678,700	3,514,200	95.5	17,789,200	2,541,300	72.3	41,960,000	145,152,000
Total Week December 21	3,678,700	3,507,400	95.3	18,074,000	2,582,000	73.6	40,451,000	144,683,000
The Texas and Louisiana Gulf Coastal Figures shown Below are Included Above in the Totals of Their Respective Districts:								
Texas Gulf Coast	526,500	526,500	100.0	2,948,100	421,200	80.0	5,646,000	11,153,000
Louisiana Gulf Coast	177,500	177,500	100.0	887,200	126,700	71.4	1,698,000	3,958,000

should be little, if any, increase in the demand for crude this year. This conclusion is based upon the fact that the refining industry must run crude to stills not to exceed the total of last year, since increased demand will be offset to a large extent by increased recovery of gasoline, combined with the necessity for disposing of excessive supplies now in storage. This should furnish the producing branch of the industry with the incentive to continue curtailment measures to a maximum degree.

Supply and Demand

The accompanying chart, showing crude production plus imports and indicated deliveries, reveals that a decided degree of improvement was realized during November. The fact that both production and imports staged a precipitous decline, accompanying the sharp decrease in indicated deliveries, proved decidedly favorable to the industry. Preliminary data for December indicates that this favorable trend was continued. It will also be noted that refinery runs of domestic crude, as shown on the daily average production chart, were materially lower in November, widening the margin between actual production and current demand. These facts demonstrate the absolute necessity for continued curtailment, while sudden increases in production, such as occured last week, emphasize the danger that lurks on several sides, ready to manifest its demoralizing effects at the slightest left-turn of the valve, so to speak. Even at this early date, it appears as though the standard adopted last year, to use the daily average production of the year 1928 as a basis for proration, would apply equally well this year. It is still too early to determine accurately what the demand for crude will be this year, but it is believed that when the finel figures for 1929 are made available it will become apparent that the standards previously adopted will prove adequate for scheduling the production of 1930. The fact remains that even greater effort will be required on the part of producers to

Production, Imports and Indicated Consumption of Crude



FIELD STATISTICS OF IMPORTANT DISTRICTS

Pool—	Oil Wells Completed	Total Initial Production	Initial Per Well	Number Producing Wells	Daily Production Barrels	Daily Prod. Per Well	Rigs Up	Wells Drilling
WEST TEXAS:								
Hendrick	619	3,116,755	5,035	562	90,105	160[1]	.	1
Church & Fields	209	209,810	1,004	202	19,585	97	2	6
Gulf-McElroy	83	61,600	742	82	14,805	181	.	2
Yates	360	2,461,835	6,838	350	137,705	391[1]	1	8
TEXAS PANHANDLE:								
Gray County	535	383,500	717	510	64,270	126[1]	11	53
OKLAHOMA:								
Oklahoma City[3]	26	176,764	6,794	23	91,157	3,963	36	169
East Earlsboro[4]	70	123,896	1,769	110	60,211	546	6	37
CALIFORNIA:								
Santa Fe Springs[2]	451	1,472,200	3,265	200	160,000	800	14	180

[1]Production partially pinched.
[2]Includes deep zone production. For field total add 76 wells and 6000 bbls.
[3]Oklahoma City has 61 producers, only 26 of which are officially completed. 38 of the completions were shut in when the production gauge was taken.
[4]East Earlsboro has 40 producers not officially completed. Production prorated 40 per cent.

maintain a reasonable degree of equilibrium between crude supply and demand.

Refined Stocks Up

It will be noted from the accompanying table of crude runs and gasoline and fuel oil stocks that runs to stills at refineries were again lower for the week ending December 28. In consequence of the slackened demand, however, stocks of both gasoline and fuel oil increased during that week. Companies aggregating 3,514,200 barrels, or 95.5 per cent of the 3,678,700 barrels estimated daily potential refining capacity of the United States contributed to this report. The crude runs to stills for the week show that these companies operated to 72.3 per cent of their total rated capacity.

Some idea of the outstanding changes in daily average production reported to the American Petroleum Institute last week can be gained from the following list of increases and decreases by important fields:

		Barrels
Gray County	Decrease	1600
Winkler County	Decrease	2450
Refugio County	Decrease	1000
Darst Creek	(New)	4650
Barbers Hill	Decrease	2700
Big Creek	Increase	1650
Humble	Increase	1750
Carr City	Decrease	1050
Logan County	Decrease	2350
Seminole	Decrease	2100
Bowlegs	Decrease	1100
Earlsboro	Increase	19,450
St. Louis	Decrease	2300
Oklahoma City	Increase	20,250
Santa Fe Springs	Increase	6500
Long Beach	Decrease	1000
Elwood-Goleta	Increase	2000
Kettleman Hills	Increase	1600
Other California Fields	Increase	11,000
Salt Creek	Increase	7000
Eastern States	Increase	1300

Oklahoma

Oklahoma crude market conditions started the new year at an even keel with prospects that this condition may continue until spring, when increased consumption may show an improvement. The willingness of operators to prorate and keep on prorating in order to hold the market price has been an outstanding achievement of the year 1929. Indications are that this condition will continue through 1930, whenever necessary.

With the potential production of Oklahoma City growing rapidly, having reached approximately 400,000 barrels, indications are that there will be little or no shortage of oil in the state, even without new discoveries. Other scattered fields promise to help Oklahoma City keep the potential of the state at a high level. If water continues to increase at Oklahoma City it may be possible that by spring or summer conditions will be changed, but there is always a possibility that some of the drilling wildcats will have opened other pools by that time.

Oklahoma City field seems to be well in hand with transportation facilities already crowded and purchasing companies unwilling to buy more crude. Operators there have taken this as their basis of curtailment and are holding steadily to the figure, despite the increasing potential and increasing actual production. If the output is to be held to the pipe line outlet in the fu-

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

(Barrels of 42 gallons)

	Week Ended December 28		Week Ended December 21
AT ATLANTIC COAST PORTS—			
Baltimore	310,000		207,000
Boston	132,000		135,000
New York	921,000	"A"	989,000
Philadelphia	176,000		285,000
Others	281,000		.....
Total	1,820,000		1,616,000
Daily Average	260,000		230,857
AT GULF COAST PORTS—			
Galveston District	.....		40,000
New Orleans & Baton Rouge	33,000		45,000
Port Arthur & Sabine District	140,000		.....
Tampa	15,000		40,000
Total	188,000		125,000
Daily Average	26,857		17,857
AT ALL UNITED STATES PORTS—			
Total	2,008,000		1,741,000
Daily Average	286,857		248,714
Daily Average Four Weeks Ended	267,000		245,893

CALIFORNIA OIL RECEIPTS AT ATLANTIC AND GULF COAST PORTS

(Barrels of 42 gallons)

	Week Ended December 28	Week Ended December 21
AT ATLANTIC COAST PORTS—		
New York	191,000	549,000
Baltimore	155,000	91,000
Boston	.....	.....
Philadelphia	108,000	80,000
Others	72,000	.....
Total'	526,000	720,000
Daily Average	75,143	102,857
AT GULF COAST PORTS—		
Total	73,000	.....
Daily Average	10,428	.....
AT ATLANTIC & GULF COAST PORTS—		
Total	599,000	720,000
Daily Average	85,571	102,857
Daily Average Four Weeks Ending	93,857	90,643
Distribution of Total California Oil Receipts is as Follows:		
Gasoline	599,000	552,000
Fuel Oil	.....	168,000
Total	599,000	720,000

"A"—Rivised.

ture it is doubtful if there will be an increased output from the pool.

California

Curtailment has been a very steadying influence in California, but the crude market is still a little nervous, with some to be had at 10 cents under the posted price. This condition particularly prevails at Santa Fe Springs, where a small group of operators who have not joined in the conservation movement are willing to dispose of their surplus at the best figure obtainable. The major companies are religiously adhering to their policies and are maintaining as firm a price structure as is possible under present conditions. Some of the smaller refiners who have been paying a small premium for crude are now obtaining at least a limited supply at prices ranging from the posted price to 10 cents below. Crude exports have been comparatively low.

Outlook Better

Since the major companies have agreed to shoulder the burden at Santa Fe Springs, the outlook in this critical area is considerably better. Many wells are being completed and the potential is climbing steadily, but a peak in the Clarke zone should be reached within 30 days. With curtailment in force, the potential will remain high during the first half of 1930. The new 9000-foot zone is still an unknown factor. Only one small group of operators has refused to join in the conservation program, which will undoubtedly be extended through another 90 days, beginning February 1. The excess caused by lack of cooperation will be largely offset by major operators.

Long Beach is being held well in hand, despite the completion of several good wells. This field is still a strong market factor and the steadiness of its yield and the high quality of its crude can not be ignored.

The disposition of surplus gasoline is causing major refiners and marketers considerable worry. Although this commodity is going out on contract in great quantities, spot sales are far below normal. Stocks of gasoline total almost 17 million barrels and an increase is expected when December figures are released. Refiners are holding their stocks for higher prices, with the bids ranging from 5¾ cents to a little above six cents. Scattering cargoes are moving at between six and 6½ cents. Out-of-state shipments are bringing from 6½ cents to seven cents.

Cheaper crude is being reflected in more cut price signs at service stations in California, but it is not believed that this cut-price practice will lead to more serious results at this time. The market for fuel oil has shown little change, with both large and small lots moving between 50 cents and 65 cents.

Further shading of price quotations on gasoline was restorted to by plant owners in the interior refining centers of Texas as a means of getting relief from burdensome stock. The volume of trading is considered normal for this season of the year, but the market is loaded with offers, and little effort is being made to curtail production.

U. S. motor gasoline is now available at a fraction of a cent under six cents per gallon in North Texas, while West Texas refiners have accepted orders at a half-cent under the latter figure to obtain quick relief. Fuel oil is the refiners' best money product and prices on the best grades of fuel have tightened since the first of the year under the influence of a more active demand, with the popular grades bringing 70 to 75 cents per barrel.

Crude is plentiful in Texas at the market price for refineries with a satisfactory credit rating. Except in a few local spots the major purchasers have retained normal runs. Plants in North Texas and Panhandle districts are able to purchase oil at less than the posted prices because of recently enforced proration plans of major pipe line companies. Wilbarger County oil is being sold on contract ranging as low as 25 cents below the market to North Texas plants.

Oklahoma City Curtailment for January Set at 50 Per Cent

TULSA.—Oklahoma City operators at a meeting in Tulsa Friday, January 3, voted unanimously to curtail 50 per cent of the field's potential during January instead of the 40 per cent as provided by the statewide proration agreement.

This action was taken in view of new production anticipated in the pool during the month which would otherwise work hardships on the outlet facilities for the period, as well as boost the state's production above the desired figure. Operators indicated that they would impose further curtailments on themselves should the field attain a greater daily production. Except for the increased proration percentage the conservation program was left unchanged. The shutting in of all new producers for a period of 30 days will continue as before.

A. V. Hoenig, vice president in charge of production for the Indian Territory Illuminating Oil Company and Foster Petroleum Corporation, in announcing the decision of the operators stated:

"The pipelines have indicated that they cannot take any more oil from the Oklahoma City field, and the daily production must be curtailed more than we anticipated it would have to be. The action of the operators was unanimous and applies only for January."

The legal subcommittee of the Oklahoma City operators general committee, headed by F. M. Carter of Indian Territory Illuminating Oil Company, also held a conference in Tulsa, and voted to go to Shawnee next Monday to be present when the injunction hearing in the suit by the City of Shawnee against the Oklahoma City oil operators for the alleged pollution of its water supply comes up.

The suit filed in Shawnee, late in December, asked for damages amounting to $1,500,000 against all of the Oklahoma City oil operators, specifically alleging that they were polluting Shawnee's water supply by dumping the salt water from their wells into streams which emptied into the Canadian River.

The salt water disposal plant of Martin Salt Company on the Sinclair Oil & Gas Company Stamper lease is reported to be unable to take care of all the salt water that it is offered.

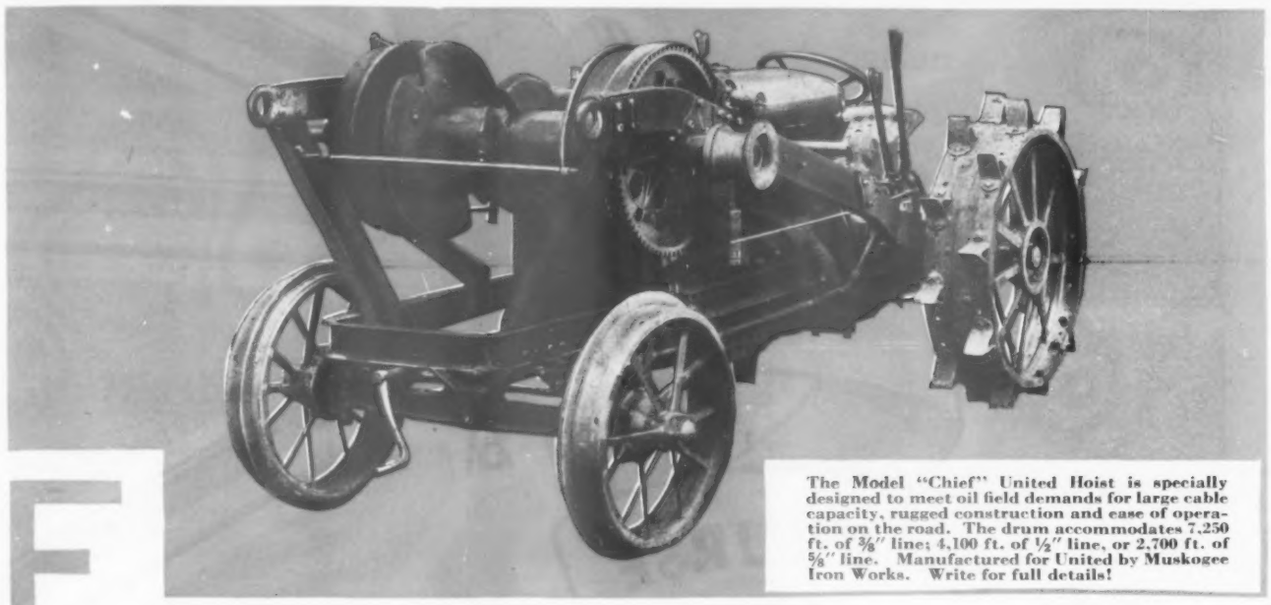
It is understood that plans are being made to provide ways of handling the salt water, which comes wholly from wells producing in the Arbuckle limestone area. Several of the companies are reported to have joined together and purchased several farms along the Canadian river and that right-of-way for a salt water line to the farms has been secured. Immense vats will be constructed on the farms, which border large sand deposits in the river valley.

Limiting Runs Reduces Wilbarger Activity

Wichita Falls, Texas.—Field work in Wilbarger County was reduced to a low level during the past week to satisfy the demands of crude purchasers for relief on oil runs, and arrangements have been made to restrict new completions to tests offsetting producers. The greater portion of the 30,860 barrels daily production credited to the county is centered on fee lands of the Waggoner estate, and the latter has waived its lease contract drilling obligations with operators during the distress market period.

Beginning January 1, Humble Oil & Refining Company, which is an important oil purchaser in Wilbarger County, inaugurated a buying plan of paying for only 50 per cent of the oil run, and storing the remaining one-half at the expense of the producer. On the same date Sinclair Crude Oil Purchasing Company cut its purchases and acceptances 50 per cent, but is now negotiating for the Waggoner estate to provide storage for all royalty and over-riding royalty oil interests being handled by Sinclair Pipe Line Company. Should the Sinclair interests get relief from this volume of oil its purchases from producers will be restored to 100 per cent takings, otherwise the Humble plan of proration may be adopted.

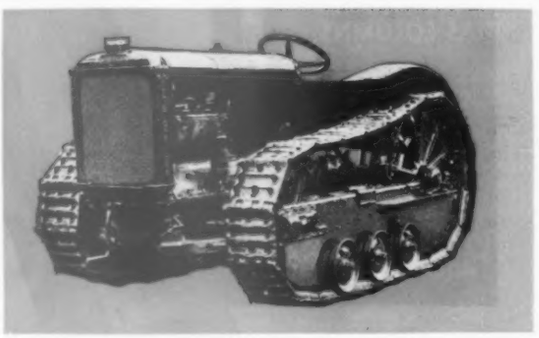
The Texas Company is the third major purchaser in the county, but in recent months has reduced its takings to a low level, while on the other hand The Texas Pipe Line Company has built up a big business on common carrier runs from the field to refineries.



The Model "Chief" United Hoist is specially designed to meet oil field demands for large cable capacity, rugged construction and ease of operation on the road. The drum accommodates 7,250 ft. of 3/8" line; 4,100 ft. of 1/2" line, or 2,700 ft. of 5/8" line. Manufactured for United by Muskogee Iron Works. Write for full details!

Field Costs Can Be Reduced

THE UNITED line of oil field equipment is designed and built for one fundamental purpose—to enable you to cut your field costs by substituting speedy, accurate, powerful machinery for hand labor or less modern and efficient power units. Learn how improved performance, stamina and usefulness of United equipment provides greater satisfaction and economy in hauling, hoisting, loading, welding, pipe handling and hundreds of other tasks.



The United Crawler Tractor, with exception of power plant and transmission, is a product of Trackson Co., Milwaukee, Wis.

The United Arc Welder is a product of Northwestern Mfg. Co., Milwaukee, Wis.

THE UNITED Crawler Tractor provides exceptional power and speed for oil field operations at the lowest possible cost per drawbar-horse power. Every hauling, hoisting, earth moving and pipe handling job can be completed quickly and economically with this remarkable power unit and its operating equipment.

The United Arc Welder is outstanding for increased production—due to simplicity, ease of operation, and the deep penetration and stability of the arc. Actually *built-into* United Tractor, it is portable and durable under all conditions. Available in both 200 and 300 ampere sizes, with welding ranges from 50 to 375 amperes.

Write for full details—or see your dealer!

UNITED TRACTOR & EQUIPMENT CORP.

612 NO. MICHIGAN AVE. CHICAGO, ILLINOIS.

UNITED TRACTORS & EQUIPMENT

MANUFACTURING MEMBERS

ALLIS-CHALMERS MFG. CO.
BROOKVILLE LOCOMOTIVE CO.
DETROIT HARVESTER CO.
DORSEY BROTHERS
FRENCH & HECHT, INC.
MAINE STEEL PRODUCTS CO.
MUSKOGEE IRON WORKS, INC.
NORTHWESTERN MFG. CO.
PERRY COMPANY
SCHRAMM, INC.
THE HUGHES-KEENAN CO.
TRACKSON COMPANY
UNIVERSAL POWER SHOVEL CO
WEHR COMPANY

TUBULAR LEGS
OF COURSE
RELATIVE CARRYING CAPACITY OF STEEL SHAPES AS COLUMNS
WELDED
SEAMLESS A.P.I. GRADE "C"
34% 47% 56% 75% 100%
BASED ON 10 FT. LENGTH WEIGHING 10.5 LB. PER FOOT
ARMORED INSIDE AND OUTSIDE

SUPER LEG STRENGTH

A derrick is only as strong as its legs. Moore super leg strength is achieved by the use of seamless pipe leg sections of 40-50 carbon steel. These sections have a minimum yield point of 45,000 pounds per square inch. Their relative strength, when used as columns, is indicated by the chart.

Armored inside and outside by galvanizing, Moore Legs retain their super strength. Champion Derrick leg sections are galvanized by the hot dip process, after all fabrication is completed. No raw edges, either outside or inside, are left exposed to the ravages of rust.

THE Moore Champion DERRICK

Moore ALL STEEL RIG EQUIPMENT

LEE C. MOORE AND COMPANY, INC.
PITTSBURGH Established 1907 TULSA
New York Offices
Oilfield Equipment Co., 30 Church Street, New York, N. Y.
DALLAS, TEXAS WICHITA, KANSAS CASPER, WYO.
SHREVEPORT, LA. HOUSTON, TEXAS
Stocks in All Principal Fields

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1928	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
June	594,850	105,200	554,400	135,400	42,350	102,850	109,300	82,400	643,400	2,370,150	71,104,500
July	587,150	102,750	597,250	133,650	42,150	90,700	113,400	80,400	644,700	2,392,150	74,156,600
August	656,350	102,200	604,000	130,200	40,200	87,500	113,300	77,700	634,150	2,445,600	75,534,600
September	724,850	99,750	604,150	129,500	39,050	84,700	112,550	78,850	631,650	2,050,050	75,151,500
October	741,350	97,900	598,550	129,950	38,800	83,550	114,000	83,300	624,450	2,511,850	77,867,800
November	715,750	96,600	586,350	135,100	38,600	83,000	109,700	81,150	653,050	2,499,300	74,978,300
December	710,600	97,200	603,700	135,050	37,300	81,350	113,450	74,600	697,850	2,551,100	79,084,400
1929											
January	722,550	97,150	632,500	136,750	36,650	78,600	111,950	73,200	747,250	2,635,600	81,703,600
February	714,800	95,950	643,350	142,300	35,700	74,600	108,550	71,750	797,800	2,684,800	75,204,400
March	666,500	95,500	662,500	147,750	35,800	74,250	108,850	70,400	786,000	2,647,400	82,068,350
April	665,600	106,400	650,100	154,550	35,550	72,900	110,850	69,400	781,350	2,646,700	79,402,100
May	679,650	115,400	651,100	150,350	35,350	71,500	114,150	72,850	749,250	2,639,600	81,827,600
June	685,200	120,750	688,200	147,500	35,700	70,050	116,750	72,000	827,200	2,763,400	82,902,250
July	722,050	124,250	718,950	148,150	35,750	68,650	122,000	74,250	874,850	2,888,900	89,555,250
August	728,100	127,950	750,750	153,100	36,300	66,900	126,600	77,900	873,300	2,940,900	91,167,250
September	714,050	128,450	741,200	156,600	37,050	65,300	137,250	78,600	874,850	2,933,350	88,000,650
October	673,600	113,400	714,550	167,050	39,700	64,550	137,400	77,950	876,600	2,864,800	88,809,500
November	640,300	110,050	702,350	171,350	36,750	63,700	135,400	76,550	706,500	2,642,800	79,285,050
December	647,100	111,300	688,550	161,550	38,750	61,950	140,250	75,800	697,850	2,623,100	81,319,950
1930											
Jan. 4	675,900	114,250	680,250	159,500	38,300	60,400	144,050	79,150	700,500	2,652,300	18,566,100
Increase	28,350	450	.....	900	300	.....	1,300	6,550	11,100	44,600	312,200
Decrease	.....	.....	4,150	.....	.....	200	.....	.....	.....	.....	.....

TEXAS (Outside Gulf Coast)

PANHANDLE DISTRICT

	Jan. 4	Dec. 28
Carson County	9,400	9,200
Gray County	64,200	65,800
Hutchinson County	25,600	26,300
Wheeler County	700	600
Others	600	700
Total	100,500	102,600

NORTH TEXAS

Archer County	18,300	18,200
Burkburnett	9,250	9,500
Electra	11,500	11,600
Iowa Park-KMA	4,800	4,700
Montague and Cooke Cos.	13,050	13,500
Wilbarger	30,050	29,600
Others	1,200	1,000
Total	88,150	88,100

WEST CENTRAL TEXAS

Brown County	9,600	9,500
Callahan County	3,200	3,000
Coleman County	6,650	6,550
Eastland-Desdemona	6,100	6,100
Jack County	4,100	4,000
Palo Pinto County	500	500
Shackelford County	9,300	9,300
Stephens County	5,750	6,000
Throckmorton County	600	600
Young County	6,950	7,100
Others	1,350	1,350
Total	54,100	54,000

WEST TEXAS

Crane-Upton Counties	43,000	43,900
Crockett County	2,100	2,100
Howard County	37,600	37,300
Jones County	2,200	2,400
Mitchell-Scurry Cos.	2,300	2,300
Pecos County	144,000	143,800
Reagan County	17,000	17,000
Winkler County	87,000	89,450
Others	2,900	2,950
Total	338,100	341,200

EAST CENTRAL TEXAS

Boggy Creek	3,950	3,950
Corsicana-Powell	6,500	6,750
Currie	400	400
Mexia	5,050	5,000
Nigger Creek	300	300
Richland	300	300
Wortham	900	900
Van Zandt	5,800	5,950
Total	23,200	23,550

SOUTHWEST TEXAS

Dale	350	350
Laredo District	9,000	9,100
Luling	10,600	10,700
Lytton Springs	900	900
Somerset	1,350	1,350
Salt Flat	28,250	28,850
Refugio	18,800	19,800
Darst Creek	4,650	...
Others	2,300	3,900
Total	76,200	74,950
Tril Tex. (Outside Gulf Coast)	680,250	684,400

TEXAS GULF COAST

Barbers Hill	14,400	16,900
Batson	1,300	1,300
Big Creek	7,650	6,000
Blue Ridge	2,000	2,000
Boling	1,050	1,200
Damon Mound	500	400
Goose Creek	5,250	5,300
Hull	9,850	10,100
Humble	13,650	11,900
Orange County	2,500	2,700
Pierce Junction	11,750	11,800
Raccoon Bend	8,600	8,900
Saratoga	1,000	1,000
Sour Lake	2,400	2,400
South Liberty	7,500	7,500
Spindle Top	18,400	18,100
Sugar Land	11,900	12,300
West Columbia	6,200	6,200
Washington Co.	1,950	1,850
Fannett	1,700	1,800
Port Neches	3,200	2,900
North Dayton	1,800	2,250
Others	4,200	4,050
Total	138,750	138,850
Texas Total	819,000	823,250

OKLAHOMA

Asher	3,450	3,550
Carr City	7,800	9,850
Logan Co.	13,900	16,250
Braman	3,600	3,650
Blackwell	3,550	3,700
Hubbard	1,700	1,700
Thomas	550	550
Tonkawa	8,750	8,850
Garber	4,700	4,700
Burbank	17,500	17,200
Osage (outside Burbank)	26,700	26,800
Cushing	15,250	15,350
Yale Jennings	8,500	8,450
Davenport	1,300	1,250
Bristow Slick	18,050	18,650
North Okmulgee	11,450	11,450
Lyons-Deaner	6,500	7,050
Cromwell	7,650	7,700
Papoose	3,100	3,200
Wewoka	4,300	4,300
Seminole	22,400	24,500
East Seminole	3,800	4,500
Bowlegs	22,200	23,300
Searight	7,850	8,050
Little River	39,450	59,600
East Little River	19,300	...
Earlsboro	31,250	64,900
East Earlsboro	53,100	...
Duncan District	8,400	8,350
Graham	3,800	3,800
Fox	1,300	1,300
Healdton	12,350	12,450
Hewitt	7,600	7,600
Scholem-Alechem	14,200	14,100
Pearson	850	850
St. Louis	47,650	49,950
Allen	21,300	21,250
Maud	7,900	8,200
Mission	14,400	15,150
Oklahoma City	99,300	79,050
Sasakwa	11,100	10,550
Others	57,900	55,900
Total	675,900	647,550

CALIFORNIA

Santa Fe Springs	167,700	161,200
Long Beach	104,000	105,000
Huntington Beach	41,500	41,500
Dominguez	9,000	9,000
Inglewood	22,500	22,500
Midway-Sunset	77,000	77,000
Ventura Avenue	51,500	51,500
Seal Beach	28,500	28,500
Elwood-Goleta	26,800	24,800
Kettleman Hills	11,000	9,400
Others	161,000	150,000
Total	700,500	689,400

KANSAS

Greenwood County	21,600	21,300
Florence-Covert	850	950
Peabody-Ebling	3,150	3,100
Eldorado-Towanda	13,550	13,500
Augusta-Fox Bush	3,050	3,000
Rainbow Bend	1,150	1,150
Russell	3,350	3,400
Churchill	5,100	5,100
Oxford	3,300	3,500
Sedgewick	24,150	23,800
Others	35,000	35,000
Total	114,250	113,800

NORTH LOUISIANA

	Jan. 4	Dec. 28
Homer	3,850	3,850
Haynesville	4,650	4,650
Caddo Light	9,900	9,450
Caddo Heavy	2,900	2,950
DeSoto-Red River	3,000	3,050
Elm Grove	550	550
Bellevue	600	600
Cotton Valley	2,300	2,300
Urania	5,200	5,200
Pleasant Hill	800	750
Zwolle	3,750	3,750
Others	800	900
Total North Louisiana	38,300	38,000

LOUISIANA GULF COAST

Bayou Boullion	50	100
East Hackberry	1,900	2,000
Hackberry	1,650	1,750
Edgerly	850	650
Evangeline	3,050	1,600
Lockport	3,300	3,300
Sorrento	150	150
Sulphur Dome	3,500	3,050
Vinton	4,200	4,300
Others	2,100	2,850
Total Louisiana Gulf Coast	20,750	19,750
Louisiana Total	59,050	57,750

ARKANSAS

El Dorado	4,300	4,350
Champagnolle	5,150	5,550
Smackover Light	5,650	5,700
Smackover Heavy	42,050	41,700
Stephens	1,000	1,000
Nevada	1,100	1,100
Lisbon	1,050	1,100
Others	100	100
Total	60,400	60,600

MOUNTAIN STATES

WYOMING

Salt Creek	34,500	27,500
Grass Creek	2,150	2,050
Elk Basin	750	700
Big Muddy	2,050	2,150
Lost Soldier	3,200	3,100
Rock River	2,250	2,250
Lance Creek	200	150
Oregon Basin	4,300	4,100
La Barge	2,300	2,200
Others	4,700	5,100
Total	56,400	49,300

MONTANA

Cat Creek	1,250	1,200
Sunburst	6,500	6,800
Pondera	2,150	2,100
Others	100	100
Total	10,000	10,200

COLORADO

Moffats (Craig)	1,050	1,200
Fort Collins	1,800	1,800
Florence	800	650
Others	1,750	1,750
Total	5,400	5,400

NEW MEXICO

Table Mesa	100	100
Artesia	750	750
Hogback	400	400
Rattlesnake	850	900
Bal. Lea & Eddy Co.'s	4,300	4,650
Others	950	900
Total	7,350	7,700
Total Mountain States	79,150	72,600

EASTERN STATES

(Including Ill., Ind., Ohio, W. Va., Pa., Ky., N. Y., & Mich.)	144,050	142,750

PRODUCTION SUMMARY

East of Rockies	1,872,650	1,845,700
Total U. S.	2,652,300	2,607,700

CRUDE OIL PRICE QUOTATIONS

(Revised to January 7, 1930)

EASTERN STATES

(Effective December 7, 1929)

Penn Grade Oil in New York Transit Lines (New York)	$3.05
Bradford District Oil in National Transit Lines (Pennsylvania)	3.05
Penn Grade Oil in National Transit Lines (Pennsylvania)	3.05
Penn Crude Oil in Southwest Pennsylvania Lines (West Virginia)	3.00
Penn Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	2.90
Penn Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.65
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.75
Coring Grade Oil in Buckeye Pipe Line Co.'s lines	1.80
Coring Heavy Grade Oil in Buckeye Pipe Line Co.'s lines	1.70
Somerset Oil in Cumberland Pipe Line Lines (Kentucky)	1.55
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) Effective Jan. 29, 1929)	.60
Keister (Pennsylvania)	1.20

CENTRAL STATES

(Effective May 21, 1929)

Posted by Ohio Oil Co.

Illinois	1.75
Indiana	1.57
Lima	1.80
Plymouth	1.28
Princeton	1.75
Waterloo	1.35
Wooster	1.90

WESTERN KENTUCKY

All grades	1.68

MID-CONTINENT

(Effective May 21, 1929)

Magnolia Petroleum Company

Under 26	.70
26 to 26.9 gravity	.75
27 to 27.9 gravity	.85
28 to 28.9 gravity	.90
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.05
31 to 31.9 gravity	1.15
32 to 32.9 gravity	1.25

From 33 to 44 gravity and above, Magnolia Petroleum Company prices are the same as those of Carter Oil Company.

MID-CONTINENT

(Effective May 20, 1929)

Carter Oil Company, Gulf Pipe Line Company, Sinclair Pipe Line Company, Prairie Oil and Gas Company and The Texas Company

25 to 25.9 gravity	.90
26 to 26.9 gravity	.95
27 to 27.9 gravity	1.00
28 to 28.9 gravity	1.05
29 to 29.9 gravity	1.10
30 to 30.9 gravity	1.15
31 to 31.9 gravity	1.20
32 to 32.9 gravity	1.25
33 to 33.9 gravity	1.30
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.40
36 to 36.9 gravity	1.45
37 to 37.9 gravity	1.50
38 to 38.9 gravity	1.55
39 to 39.9 gravity	1.60
40 to 40.9 gravity	1.65
41 to 41.9 gravity	1.70
42 to 42.9 gravity	1.75
43 to 43.9 gravity	1.80
44 and above	1.85

PANHANDLE

(Effective May 20, 1929)

GRAY COUNTY

(Humble Oil & Refining Company, Magnolia Petroleum Company, Gulf Pipe Line Company)

Below 29 gravity	.90
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.00
31 to 31.9 gravity	1.05
32 to 32.9 gravity	1.10
33 to 33.9 gravity	1.15
34 to 34.9 gravity	1.20
35 to 35.9 gravity	1.25
36 to 36.9 gravity	1.30
37 to 37.9 gravity	1.35
38 to 38.9 gravity	1.40
39 to 39.9 gravity	1.45
40 to 40.9 gravity	1.50
41 to 41.9 gravity	1.55
42 to 42.9 gravity	1.60
43 to 43.9 gravity	1.65
44 and above	1.70

WHEELER COUNTY

(Humble Oil and Refining Company and Magnolia Petroleum Company)

Below 30 gravity	.90
30 to 30.9 gravity	.95
31 to 31.9 gravity	1.00
32 to 32.9 gravity	1.05
33 to 33.9 gravity	1.10
34 to 34.9 gravity	1.15
35 to 35.9 gravity	1.20
36 to 36.9 gravity	1.25
37 to 37.9 gravity	1.30
38 to 38.9 gravity	1.35
39 to 39.9 gravity	1.40
40 to 40.9 gravity	1.45
41 to 41.9 gravity	1.50
42 to 42.9 gravity	1.55
43 to 43.9 gravity	1.60
44 and above	1.65

CARSON-HUTCHINSON COUNTIES

(Humble Oil and Refining Company, Magnolia Petroleum Company and Gulf Pipe Line Company)

Below 32 gravity	.90
32 to 32.9 gravity	.95
33 to 33.9 gravity	1.00
34 to 34.9 gravity	1.05
35 to 35.9 gravity	1.10
36 to 36.9 gravity	1.15
37 to 37.9 gravity	1.20
38 to 38.9 gravity	1.25
39 to 39.9 gravity	1.30
40 to 40.9 gravity	1.35
41 to 41.9 gravity	1.40
42 to 42.9 gravity	1.45
43 to 43.9 gravity	1.50
44 and above	1.55

SOMERSET

Grayburg

Below 33 gravity	1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17

WEST TEXAS

(Humble, Gulf, Magnolia, The Marland Company and Southern Crude Oil Purchasing Company)*

(Effective Nov. 21, 1929)

Crane-Upton, Crockett, Howard, Pecos and Winkler Counties and Lea County, N. Mex.

Below 25 gravity	.70
25 to 25.9 gravity	.74
26 to 26.9 gravity	.78
27 to 27.9 gravity	.82
28 to 28.9 gravity	.86
29 to 29.9 gravity	.90

CALIFORNIA CRUDE OIL PRICES AT THE WELL

(EFFECTIVE NOVEMBER 8, 1929)

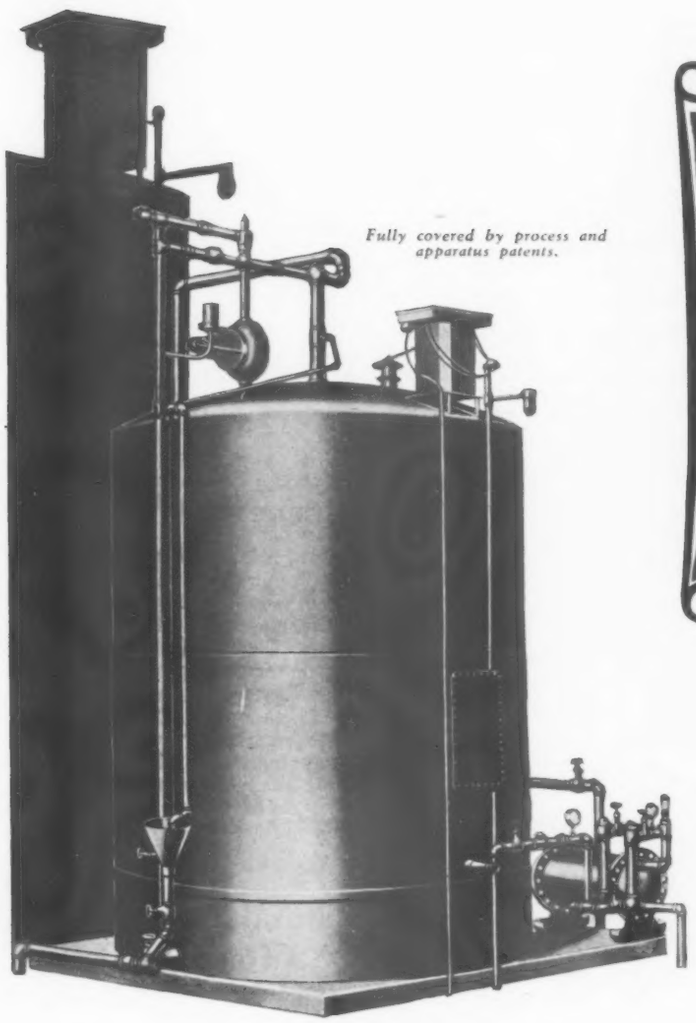
Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons in fields indicated)

Gravity	Ventura*	Signal Hill	Alamitos Heights-Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Elwood† Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elks Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$ .85	$ .70	$ .70	$ .70	$ .70	$ .70	$ ..	$ ..	$ .70	$ .70	$ .70	$ .70	$ .70	..	$ .50	$ .50	$ .50	$ .50	$ .50	$ .50
15-15.9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
16-16.9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
17-17.9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
18-18.9	.85	.75	.75	.75	.75	.75	..	..	.75	.75	.75	.70	.75	..	.50	.56	.56	.56	.56	.56
19-19.9	.85	.80	.80	.80	.80	.80	..	..	.80	.80	.80	.75	.80	..	.50	.62	.62	.62	.62	.62
20-20.9	.85	.85	.85	.85	.85	.85	..	..	.85	.85	.84	.80	.84	..	..	.68	.68	.68	.68	.68
21-21.9	.86	.89	.89	.89	.89	.89	..	..	.89	.89	.88	.85	.88	.89	..	.74	.74	.74	.74	.74
22-22.9	.87	.93	.93	.93	.93	.93	..	..	.93	.93	.91	.90	.91	.92	..	.80	.80	.80	.80	.80
23-23.9	.90	.97	.97	.97	.97	.97	..	..	.97	.97	..	.95	.94	.95	..	.85	.85	.85	.85	.85
24-24.9	.94	1.01	1.01	1.01	1.01	1.01	1.01	..	1.01	1.01	..	.98	.97	.98	..	.90	.90	.90	.88	.88
25-25.9	.98	1.05	1.05	1.05	1.05	1.05	1.05	..	1.05	1.05	..	1.01	1.00	1.01	..	.95	.95	.95	.91	.91
26-26.9	1.02	1.09	1.09	1.09	1.09	1.09	1.09	..	1.09	1.09	..	1.04	1.04	1.04	..	1.00	1.00	1.00	.94	.94
27-27.9	1.06	1.13	1.13	1.13	1.13	1.13	1.13	..	1.13	1.13	..	1.07	1.08	1.07	..	1.05	1.05	1.05	.98	.97
28-28.9	1.10	1.17	1.17	1.17	1.17	1.17	1.17	..	1.17	1.17	..	1.10	1.12	1.10	..	1.10	1.10	1.10	1.02	..
29-29.9	1.14	1.21	1.21	1.21	..	1.21	1.21	..	..	1.21	..	1.13	1.16	1.15	..	1.16	1.16	1.16	1.06	..
30-30.9	1.18	1.25	1.25	1.25	..	1.25	1.25	..	..	1.25	..	1.16	1.20	1.20	..	1.22	1.22	1.22	1.10	..
31-31.9	1.23	1.30	1.30	1.30	..	..	1.30	..	..	..	..	..	..	1.25	..	1.28	1.28	1.28	1.14	..
32-32.9	1.28	1.35	1.35	1.35	..	..	1.35	..	..	..	..	..	..	1.30	..	1.34	1.34	1.34	1.18	..
33-33.9	..	..	..	..	..	..	1.41	..	..	..	..	..	..	1.35	..	1.40	1.40	1.40	1.22	..
34-34.9	..	..	..	..	..	..	1.47	1.16	..	..	..	..	..	1.40	..	..	..	1.46	1.26	..
35-35.9	..	..	..	..	..	..	1.53	1.22	..	..	..	..	..	1.45	..	..	..	..	1.30	..
36-36.9	..	..	..	..	..	..	1.59	1.28	..	..	..	..	..	1.50	..	..	..	..	..	..
37-37.9	..	..	..	..	..	..	1.65	1.34	..	..	..	..	..	1.55	..	..	..	..	..	..
38-38.9	..	..	..	..	..	..	1.71	1.40	..	..	..	..	..	1.60	..	..	..	..	..	..
39-39.9	..	..	..	..	..	..	1.77	1.46	..	..	..	..	..	1.65	..	..	..	..	..	..
40-40.9	..	..	..	..	..	..	1.83	1.52	..	..	..	..	..	..	..	..	..	..	..	..
41-41.9	..	..	..	..	..	..	1.89	1.58	..	..	..	..	..	..	..	..	..	..	..	..
42-42.9	..	..	..	..	..	..	1.95	1.64	..	..	..	..	..	..	..	..	..	..	..	..

KETTLEMAN HILLS—55 degrees Gravity and above $1.65 per barrel. *Union Oil Company. †Changed March 18, 1929.

(See Page 46)

PETRECO



Fully covered by process and apparatus patents.

If your production tests higher than pipe line requirements in emulsion content, send for our booklet "The Petreco Process for the Electrical Dehydration of Crude Oil Emulsions."

PETROLEUM RECTIFYING COMPANY of CALIFORNIA

Security Title Insurance Bldg. — 530 West 6th Street, Los Angeles, Calif.

Petroleum Bldg., Houston, Texas

CRUDE OIL PRICE QUOTATIONS (*Continued from Page 44*)

30 to 30.9 gravity	.94
31 to 31.9 gravity	.98
32 to 32.9 gravity	1.02
33 to 33.9 gravity	1.06
34 to 34.9 gravity	1.10
35 to 35.9 gravity	1.14
36 and above	1.18

*Gulf does not post in Winkler County; Magnolia posts in Crane, Upton and Winkler Counties. Southern Crude Oil Purchasing Company posts only in Crane, Upton and Winkler Counties.

HOWARD AND GLASSCOCK COUNTY CRUDE

(Effective November 26, 1929)

Below 25 gravity	.70
25 to 25.9 gravity	.74
26 to 26.9 gravity	.78
27 to 27.9 gravity	.82
28 to 28.9 gravity	.84
29 to 29.9 gravity	.86
30 to 30.9 gravity	.88
31 to 31.9 gravity	.90
32 to 32.9 gravity	.92
33 to 33.9 gravity	.94
34 to 34.9 gravity	.96
35 to 35.9 gravity	.98
36 and above	1.00

MARKHAM

The Texas Company

(Effective May 20, 1929)

All grades	$1.00

LULING

All grades	.90

DARST CREEK

Magnolia Petroleum Co.

All Grades	$1.25

NORTH AND CENTRAL TEXAS

(Effective May 21, 1929)

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs Crude

(Humble Oil and Refining Company)

Below 25	.85
25 to 25.9 gravity	.90
26 to 26.9 gravity	.95
27 to 27.9 gravity	1.00
28 to 28.9 gravity	1.05
29 to 29.9 gravity	1.10
30 to 30.9 gravity	1.15
31 to 31.9 gravity	1.20
32 to 32.9 gravity	1.25
33 to 33.9 gravity	1.30
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.40
36 to 36.9 gravity	1.45
37 to 37.9 gravity	1.50
38 to 38.9 gravity	1.55
39 to 39.9 gravity	1.60
40 to 40.9 gravity	1.65
41 to 41.9 gravity	1.70
42 to 42.9 gravity	1.75
43 to 43.9 gravity	1.80
44 and above	1.85

SOUTH TEXAS

Mirando	.90
Salt.. Flat	1.25

GULF COAST

(Effective May 21, 1929)

Grade "A" all companies	1.30
Gulf Coast Light Oil, below 25	1.15
25 to 25.9 gravity	1.18
26 to 26.9 gravity	1.21
27 to 27.9 gravity	1.24
28 to 28.9 gravity	1.27
29 to 29.9 gravity	1.30
30 to 30.9 gravity	1.33
31 to 31.9 gravity	1.36
32 to 32.9 gravity	1.39
33 to 33.9 gravity	1.42
34 to 34.9 gravity	1.45
35 to 35.9 gravity	1.48
36 to 36.9 gravity	1.51
37 to 37.9 gravity	1.54
38 to 38.9 gravity	1.57
39 to 39.9 gravity	1.60
40 and above	1.63

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9. Its price on all crudes above 35 to $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

CLASSIFICATIONS OF GULF COAST CRUDE

The Texas Company: GRADE A—Beaume gravity not over 26.0 degrees at 60 degrees Fahrenheit; sulphur not over 0.5 per cent; in distilling 500 cc. of the crude that part of the distillate cut between 65 per cent off and 85 per cent off shall have a pour test of zero or lower. GRADE B—All Gulf Coast heavy crudes which do not meet tests for Grade "A" or for Gulf Coast light.

Humble Oil & Refining Company: GRADE A—All crude conforming to the following tests: viscosity not less than 100 seconds Saybolt at 100 degrees Fahrenheit; sulphur not over .4 per cent; Beaume gravity not over 25 at 60 degrees Fahrenheit. Cold tests of distillates having a viscosity of 1000 seconds at 100 degrees Fahrenheit shall not be over 5 degrees Fahrenheit. GRADE B—Embraces all Coastal crude which does not meet the tests for "A" grade crude.

Gulf Pipe Line Company: GRADE A—Beaume gravity not over 24 at 60 degrees Fahrenheit; viscosity not less than 100 seconds universal Saybolt at 100 degrees Fahrenheit; and sulphur not over 0.4 per cent. The yield of 250 viscosity reduced distillate at 100 degrees Fahrenheit not less than 30 per cent, and this 30 per cent not heavier than 20 Beaume, and its pour test not above zero Fahrenheit. The reduced distillate to be secured by reducing the crude with fire and steam until the bottoms have a flash of not less than 540 degrees Fahrenheit, and not more than 560 degrees Fahrenheit open cup, and the entire distillate obtained n this way reduced to a distillate of 250 viscosity. The 10 per cent cut in the original distillate having an average viscosity of 500 seconds at 100 degrees Fahrenheit to have a pour test not higher than 5 degrees Fahrenheit. GRADE B—Embraces crude which does not meet test for "A" grade.

WYOMING-MONTANA

(Effective May 21, 1929)

Wyoming

Byron	1.33
Ferris	1.60
Elk Basin	1.65
Grass Creek	1.65
Rock Creek	1.40
Lost Soldier	1.05
Lance Creek	1.68
Mule Creek	1.20
Notches	.65
Big Muddy	1.43
Osage	1.65
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.65
Lander	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

Salt Creek

Midwest Refining Company

29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 and above	1.23

MONTANA

(Effective May 24)

Sunburst	$1.75
Cat Creek	1.48
Lake Basin	2.20

NEW MEXICO

Artesia	1.08
Hogback	1.43

CANADA

(Effective May 21, 1929)

Oil Springs	2.27
Petrolia	2.20

LOUISIANA-ARKANSAS

(Effective May 22, 1929)

Homer, Haynesville, Caddo, El Dorado, De Soto and Crichton and Cotton Valley*

(Atlantic Oil Producing Company, Standard of Louisiana, Magnolia Petroleum Company and The Texas Company.)

27 to 27.9 gravity	$1.00
28 to 28.9 gravity	1.05
29 to 29.9 gravity	1.10
30 to 30.9 gravity	1.15
31 to 31.9 gravity	1.20
32 to 32.9 gravity	1.25
33 to 33.9 gravity	1.30
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.40
36 to 36.9 gravity	1.45
37 to 37.9 gravity	1.50
38 to 38.9 gravity	1.55
39 to 39.9 gravity	1.60
40 to 40.9 gravity	1.65
41 to 41.9 gravity	1.70
42 to 42.9 gravity	1.75
43 to 43.9 gravity	1.80
44 gravity and above	1.85

*Shreveport-Eldorado's postings stop at above 40 gravity.

The posting on Cotton Valley is same as Caddo. From 36 to 52 and above the regular gravity schedule is followed:

The Texas Company pays North Texas gravity scale in North Louisiana.

STEPHENS

(All Companies)

Below 28 gravity	.90
28 to 28.9 gravity	.94
29 to 29.9 gravity	.98
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.06
32 gravity and above	1.10

SMACKOVER

(All Companies)

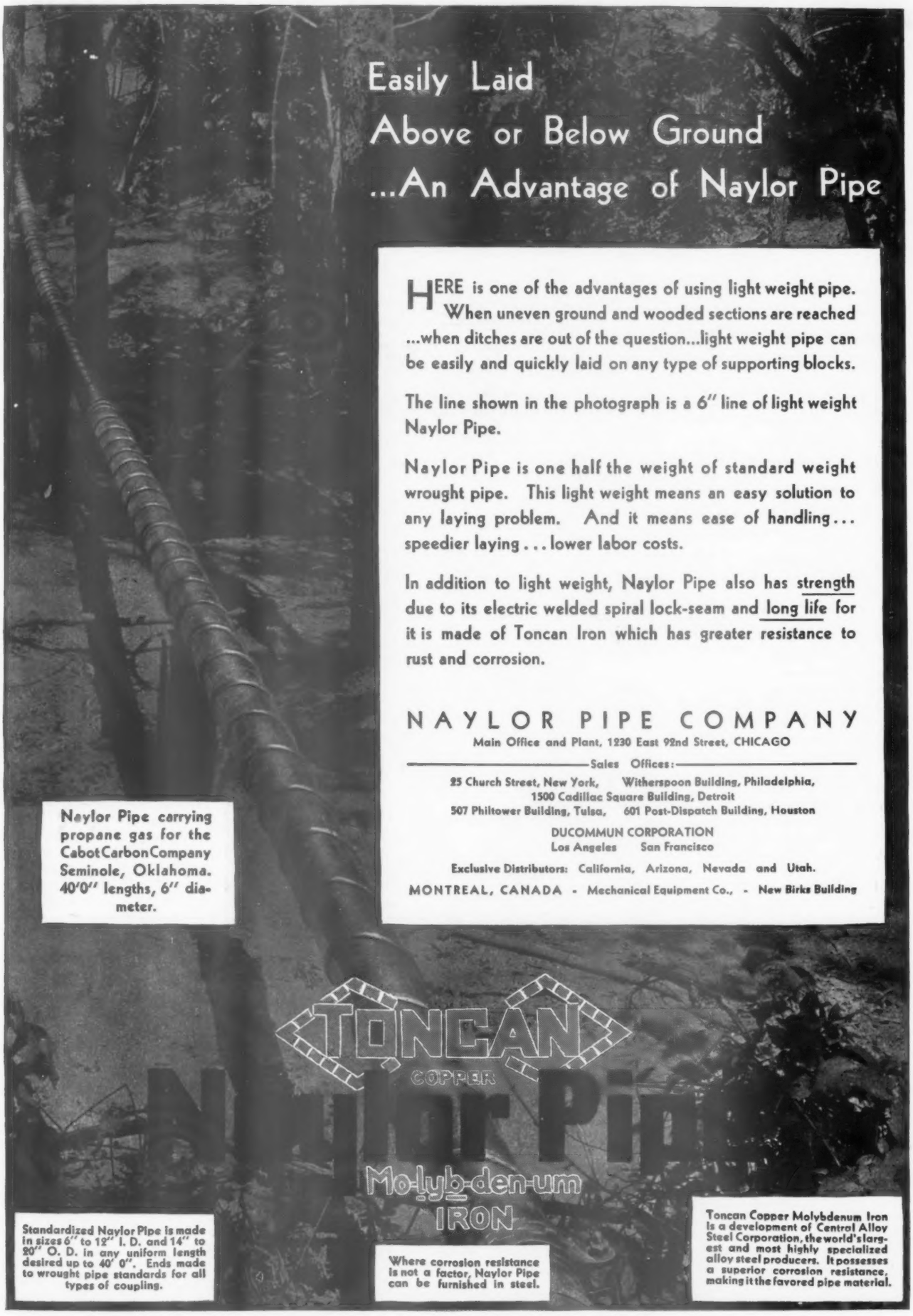
Below 24 gravity	.85
24 and above	1.00
Bellevue	1.30
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	1.00
Calion	.75

Getty Invades Texas; Opens Fort Worth Office

Fort Worth, Texas.—The Geo. F. Getty Petroleum Corporation, subsidiary of Geo. F. Getty, Inc., Los Angeles, California, has established headquarters in the Electric Building, Fort Worth, and is acquiring leases in West and East Texas. L. R. Manning is in charge of Texas operations. D. M. Wallace has been transferred from New Mexico as geologist for the company in the West Texas district, and D. G. Barnett has charge of geological work under way in East Texas, both operating out of the Fort Worth office.

Natural Gas Department Moves to Dallas

Dallas, Texas.—Headquarters of the Natural Gas Department of the American Gas Association has been transferred from Pittsburgh to the seventh floor of the Allen Building, Dallas, and E. J. Stephany, secretary arrived late last week to assume charge after closing the Pittsburgh office. The removal of the offices to Dallas was brought about by expansion of the natural gas industry in the Southwest and West in recent years. H. C. Morris, president of the Dallas Gas Company, is chairman of the Natural Gas Department of the association.



Easily Laid Above or Below Ground ...An Advantage of Naylor Pipe

HERE is one of the advantages of using light weight pipe. When uneven ground and wooded sections are reached ...when ditches are out of the question...light weight pipe can be easily and quickly laid on any type of supporting blocks.

The line shown in the photograph is a 6" line of light weight Naylor Pipe.

Naylor Pipe is one half the weight of standard weight wrought pipe. This light weight means an easy solution to any laying problem. And it means ease of handling... speedier laying... lower labor costs.

In addition to light weight, Naylor Pipe also has strength due to its electric welded spiral lock-seam and long life for it is made of Toncan Iron which has greater resistance to rust and corrosion.

NAYLOR PIPE COMPANY

Main Office and Plant, 1230 East 92nd Street, CHICAGO

Sales Offices:

25 Church Street, New York, Witherspoon Building, Philadelphia,
1500 Cadillac Square Building, Detroit
507 Philtower Building, Tulsa, 601 Post-Dispatch Building, Houston

DUCOMMUN CORPORATION
Los Angeles San Francisco

Exclusive Distributors: California, Arizona, Nevada and Utah.

MONTREAL, CANADA - Mechanical Equipment Co., - New Birks Building

Naylor Pipe carrying propane gas for the Cabot Carbon Company Seminole, Oklahoma. 40'0" lengths, 6" diameter.

TONCAN COPPER Naylor Pipe

Mo-lyb-den-um IRON

Standardized Naylor Pipe is made in sizes 6" to 12" I. D. and 14" to 20" O. D. in any uniform length desired up to 40' 0". Ends made to wrought pipe standards for all types of coupling.

Where corrosion resistance is not a factor, Naylor Pipe can be furnished in steel.

Toncan Copper Molybdenum Iron is a development of Central Alloy Steel Corporation, the world's largest and most highly specialized alloy steel producers. It possesses a superior corrosion resistance, making it the favored pipe material.

PERSONAL MENTION-MEN YOU KNOW

J. S. Ross, in charge of the United States Bureau of Mines office at Shreveport, Louisiana, has returned to Shreveport after a month's vacation spent in California. Mr. Ross made the trip to and from the Pacific coast by automobile.

D. P. Hamilton, vice-president of the Root Refining Company, with headquarters in Shreveport, has returned home from a trip to Europe.

Paul R. Martin, chief scout for the Pure Oil Company in Texas and New Mexico, has returned to headquarters at Fort Worth after visiting points in Oklahoma and Kansas.

J. D. McMahon and **J. E. Brown,** auditors in the same office of United Gas Company, Houston, announced the birth of baby girls Sunday, January 5, within the same hour.

C. A. Russell, vice president in charge of West Texas operations of the Republic Production Company and of the New Mexico operations of the Pueblo Oil Company, has been transferred to the general offices at Houston of the American Republics Corporation, the parent organization. Russell will assume charge of Gulf Coast operations of the Republic Production Company as result of the change, and will remain actively in charge of his former territory. Jerry Chestnut, district land man, has been placed in charge of the San Angelo district office.

Chas. A. Daniels, superintendent of production and drilling for Independent Oil & Gas Company in West Texas, has moved his operating headquarters from San Angelo to Midland, Texas.

Ed Bacon, for several years prominent among scouting activities in the Mid-Continent, as chief scout of the Shell Petroleum Corporation, Tulsa, has been transferred to the crude oil department. With his transfer J. F. Hallett has been made chief scout of Shell Petroleum Corporation. Hallett has for the past four years been in the scouting and land departments at Wichita, Kansas.

Lionel T. Barneson has resigned as president and chairman of the board of directors of General Petroleum Corporation.

J. A. Brown, formerly vice-president of General Petroleum Corporation, has been advanced to the presidency of the organization.

Henry Cook, formerly salesman for the Byron-Jackson Company, has taken over the sale of several specialties and will establish his headquarters at Taft, California.

A. W. PEAKE
President Dixie Oil Company, Tulsa

Vacuum Moves Offices to San Angelo

San Angelo, Texas.—Vacuum Oil Company has established a district land and geological office here on the fifth floor of the Western Reserve Life building as result of the discontinuance of offices previously maintained at Eastland and Midland, Texas. R. H. Woods is head of the land department and G. E. Green is chief geologist of the San Angelo office, which will cover activities of the company in North and West Texas. Harry M. Sample, who had charge of the Eastland offices, has been transferred to state headquarters at Houston.

J. Edgar Pew, vice-president of Sun Oil Company and a well known leader among members of the oil fraternity, was honor guest at a luncheon at Dallas, January 3, on the eve of his departure for Philadelphia, where he will join the general offices of the company and assume duties of a wider scope. The luncheon was sponsored by the Dallas Wildcat Committee of the Mid-Continent Oil & Gas Association, and about 80 oil men and prominent business men attended the farewell reception.

Mr. Pew will leave Dallas the middle of the current week to locate in Philadelphia, but will continue to direct the activities of Sun Oil Company and Twin State Oil Company in the Southwest.

Short talks made by speakers on the luncheon program praised Mr. Pew as a constructive worker for the oil industry and as a valuable civic leader of Dallas. Edward T. Moore, president of the Simms Oil Company and head of the Texas Division of the Mid-Continent Oil & Gas Association, presided as master of ceremonies. The following made talks: Lieutenant-Governor Barry Miller; Nathan Adams, Dallas banker; J. L. Lancaster, president Texas & Pacific Railway; R. R. Penn, president Penn Oil Company and head of the Dallas Wildcats; and Judge W. H. Francis, vice-president Magnolia Petroleum Company.

A desk set, bearing an engraved testimonial, was presented to Mr. Pew as a parting gift from the Dallas oil men. The presentation was made by Judge Francis.

Alex S. Fields, field superintendent in charge of the eastern sub-division of the Southern district for the Shell Petroleum Corporation, Dallas, resigned January 1 to become assistant director of sales for the Naylor Pipe Company, with headquarters at Chicago. Fields was superintendent in charge of the Shell Petroleum Corporation's recent heavy drilling campaign in Winkler County, West Texas, and has been an active worker in standardization and engineering activities of the American Petroleum Institute.

F. W. Shelton, vice-president and general production superintendent of Reiter-Foster Oil Corporation, Tulsa, has resigned to engage in the general practice of petroleum engineering.

PARKERSBURG

Has served the oil fields of the world for 32 years

STEEL DERRICKS

Conforming to A. P. I. Standards

EASE means Speed when running a derrick, and Simplicity, the keynote of Ease, is a major feature of Parkersburg Steel Derricks.

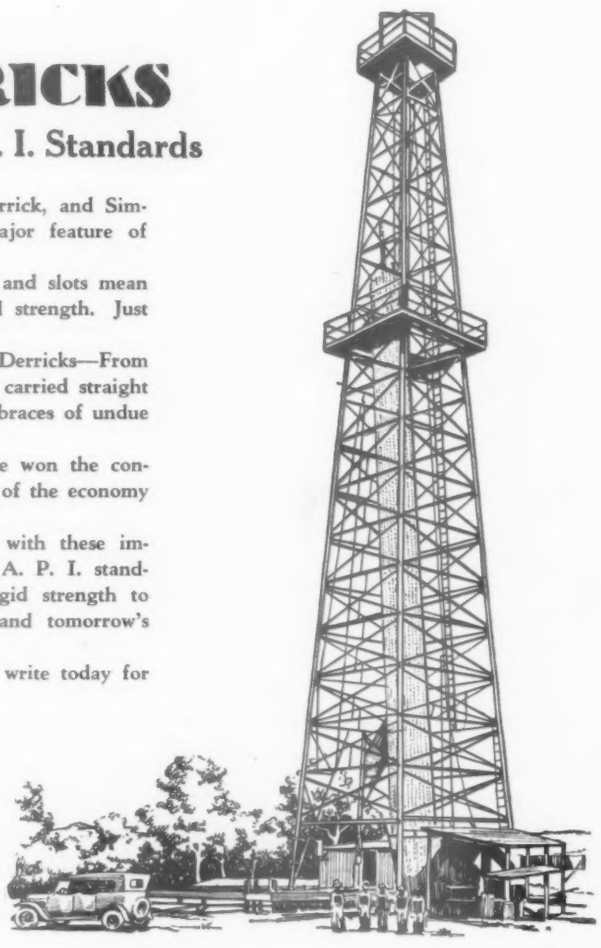
Parkersburg Patented, one-wrench bolts and slots mean much in easy assembling, as well as rigid strength. Just ask the rig builder who erects them.

Another advantage of Parkersburg Derricks—From Crown Block to Sub-Structure the load is carried straight down the derrick legs, relieving girts and braces of undue strain.

For several years, these advantages have won the confidence and convinced oil men everywhere of the economy of Parkersburg Quality Steel Derricks.

And now, Parkersburg Steel Derricks, with these important time-saving features, are built to A. P. I. standards. Three types are available, with rigid strength to withstand the extreme loads of today's and tomorrow's deep drilling.

See our representative in your field, or write today for specifications and prices.



THE PARKERSBURG RIG & REEL COMPANY

EXECUTIVE OFFICES & MAIN PLANT

PARKERSBURG, WEST, VA.

PARKERSBURG PRODUCTS

API	Steel Derricks and Steel Crown Blocks ■		Rig Irons (A.P.I. Standard) ■
	Chain Driven Sand Reels and Bailing Reels ■		Portable Drilling Machines (Wood and All-Steel) ■
	Steel Wheels ■		Bolted Steel Tanks ■
API	All-Steel Standard Rigs ■		Miscellaneous Drilling Equipment ■

Check the equipment in which you are interested, tear out and return this coupon, with your name and address, to us, and we will send you complete information on the items checked.

Oklahoma--Kansas Field Notes

WARREN BAKER, *Staff Representative, Tulsa, Oklahoma*

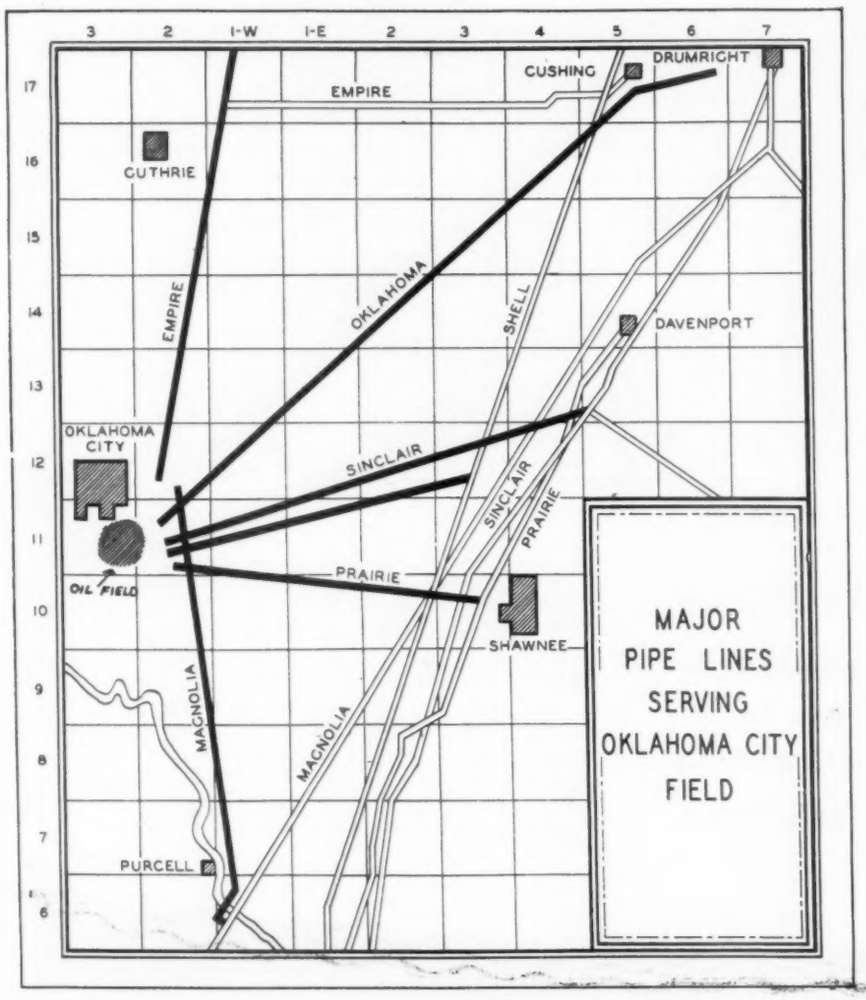
Oklahoma City Takes Rank As State's Greatest Oil Field

By WARREN BAKER
Staff Representative

THE industry may postpone through conservation and lack of outlets, any great peak in the production of the Oklahoma City field, but it must realize and face the fact that in this pool it is offered an oil producing area of great magnitude that will continually threaten the Mid-Continent light crude oil market for sometime to come.

At this time the actual potential production of the pool is increasing by leaps and bounds as new wells are being added rapidly. By taking the latest gauge available on all producers in the field, including drilled in but shut-in wells and part time proration producers, the potential output of the Oklahoma City field is close to 400,000 barrels per day. The strict conservation program in effect in the pool is attested by the fact that its actual output has never exceeded 121,000 barrels per day.

This figure is probably exaggerated a little by the method of taking the gauge. The 400,000 barrels per day figure is based on actual 24-hour gauges, but it must be remembered that offset wells are shut in at all times, which should increase the pressure at the flowing well and thereby gain additional production. It is also very doubtful if the pool could maintain such an output over any length of time. Water is already making serious inroads on production and would increase faster if the wells were opened up.



Oklahoma City's potential becomes greater when it is considered that only 61 producers make this total, giving it an average of nearly 7000 barrels per well. The producing horizon is 6500 feet and the field only one year old. There are 184 drilling operations of which 36 are locations and rigs, 15 drilling less than 3000 feet, 12 drilling between 3000 and 4000 feet, six between 4000 and 5000 feet, 42 drilling from 5000 to 6000 feet, and 39 below 6000 feet, while 34 are waiting on the cement to set.

Any doubt as to the largest single pool ever found in Oklahoma is eliminated by the study of the statistics of the Oklahoma City pool. The combined Greater Seminole area had a potential in excess of the Oklahoma City field, but no single field in that area, or anywhere else in the state, has ever reached the potential of Oklahoma City. Greater Seminole had an estimated potential of 700,000 barrels per day at one time from six fields, while Oklahoma City has more than half that figure from one pool. Oklahoma City will, during the next 30 days, see its greatest period of completioning and its potential should increase. It is also undefined, except perhaps on the southwest where small wells are being found. Greater Seminole had several hundred wells when at its peak, whereas Oklahoma City now has less than 100.

Water Intrusion Hits Lime Formation

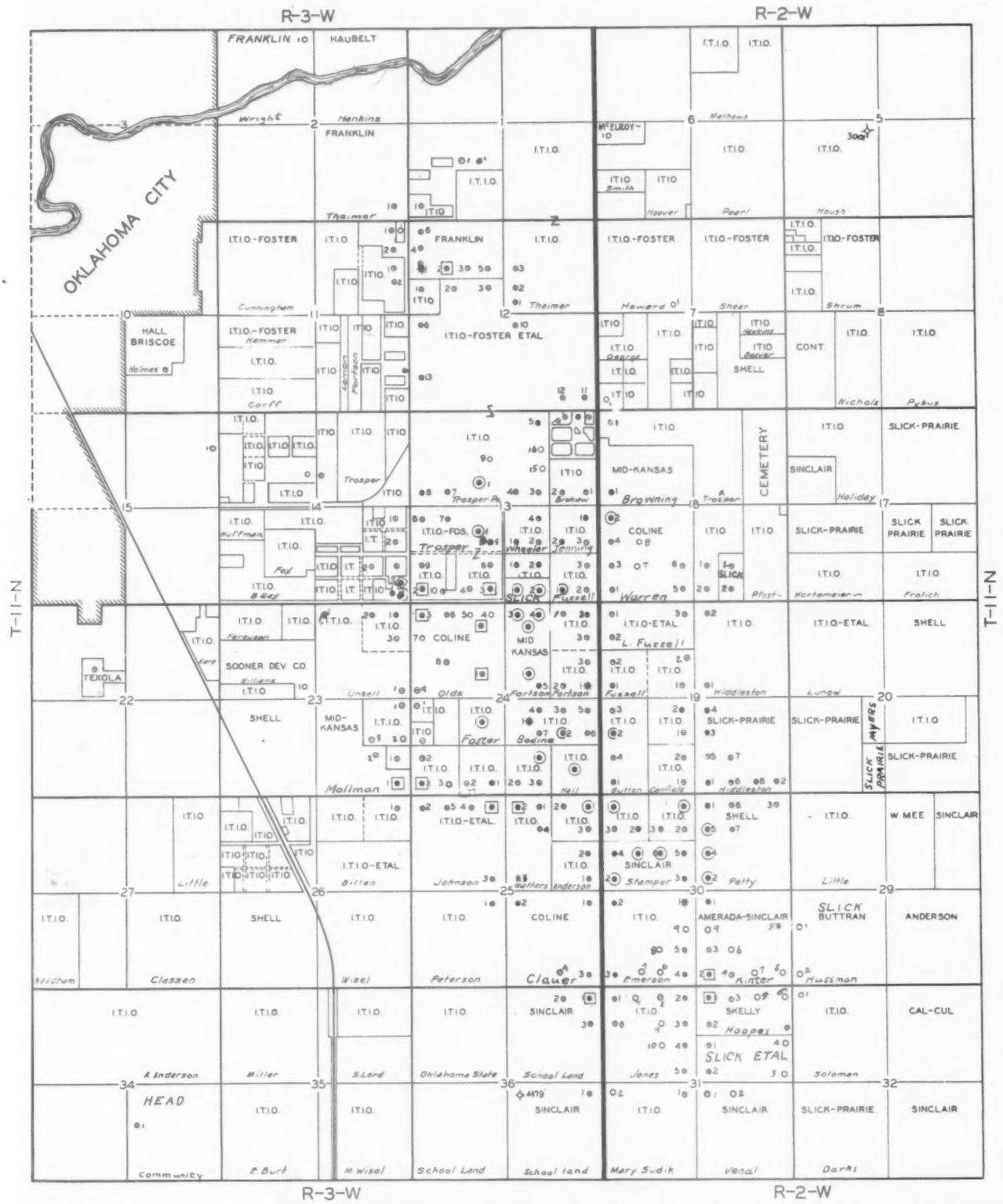
The lime producing formation covering the top of the Oklahoma City structure, and which has yielded the largest wells ever found in the state, and some of the largest high gravity crude producers in the world, is experiencing a heavy and increasing water intrusion. This is expected to lower the ultimate recovery and cause a quicker decline in production. Continuation of the strict

conservation program in the area will retard the water intrusion to a large extent. It is the general belief that if all the Arbuckle lime producing wells were opened that water would soon increase. This is customary with lime producing areas.

Of the 61 producers in the field, 47 are producing from the lime horizon and of this number 24 are making water. The amount of cutting varies from a small showing up to figures that exceed the oil output. Some wells are making 5000 barrels of water daily.

In view of the fact that water is making such serious intrusion on the lime formation, general opinion now is that the sand horizon, known as the Detrital zone, will be the most important producing formation. The Detrital zone has been found on every side of the field except to the east, where it may not be present due to sharp dipping of formations on that edge of the field. It lies on the flank of the structure surrounding the Arbuckle lime producing area.

At this time the southeast edge of the pool is getting the greatest play. This is because of the completion of



Map of the Oklahoma City pool. Circled wells indicate wells making water. Wells with squares around them are Detrital sand formation producers, all other wells are producing from the Arbuckle Limestone

Guaranteed

to take more punishment than any tool joint you have ever used

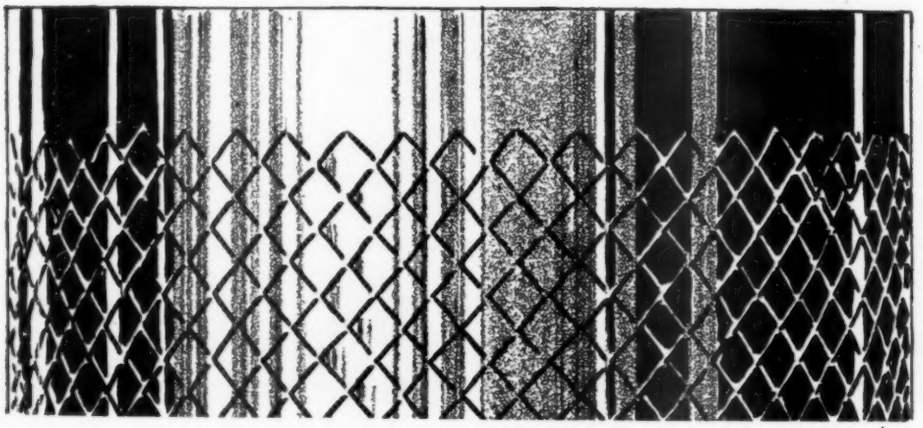
The power to withstand great punishment is built into Brewster A. P. I. Shouldered Tool Joints. In use by all drill pipe manufacturers, this same "V" type thread is naturally preferred because of its amazing durability.

Brewster A. P. I. Shouldered Tool Joints are scientifically Heat Treated, perfectly fitted and thoroughly inspected. All threads are automatically milled, giving absolute accuracy.

Our forgings are made by the largest maker of tool joint forgings in the United States, who have made 90% of the forgings for the trade in the last ten years.

Besides A. P. I. Shouldered Tool Joints, BREWSTER PRODUCTS include: Perfection Core Barrel; Chrome Nickel Drill Collars; Six Blade Rock Bits; Special Fish Tail and Gumbo Bits; Core Barrel Cutter Heads for both hard and soft formations — the hard formation cutter heads are faced with a substance of diamond-like hardness.

The Brewster COMPANY~INC.
SUCCESSORS TO OIL CITY IRON WORKS, INC.
Shreveport, Louisiana



A complete stock carried at these branch warehouses: Oklahoma City—Red Ball, Inc., 2-4 E. California St., Phone W-3680; Houston — 2000 Harrington St., Phone Capitol-3021. *Distributors:* Wilson Supply Co., Houston and Beaumont, Texas; Murray-Brooks Hdw. Co., Lake Charles, La.; T. T. Word Supply Co., Houston, Texas and Lake Charles, La.; The Ellis Iron Works, Inc., El Dorado, Arkansas.

Skelly Oil Company's Hoopes 1, NWc NE Section 31-11-2w, southeast outpost of the field. This well is by far the largest sand completion, having made a potential flow of 32,000 barrels during its first full 24-hour period. Indications are that the Detrital formation is leveling out in this direction, giving operators hopes that it may extend for some distance.

Average Cost of Drilling

Kenneth Covel, petroleum engineer for Indian Territory Illuminating Oil Company, recently compiled the average financial requirements for completion of a test in the Oklahoma City district. The average drilling time is 114 days to reach the 6500-foot level, including cementing and setting pipe, while the average cost per well is $155,000.

Covel listed briefly the approximate average drilling costs as follows:

"Cost of construcing slush ponds average $650; cost of digging cellars in the neighborhood of $225; making the average cost of excavation work at each location about $875. The general prevailing contract price for drilling the 12-inch or 12¼-inch rotary hole and completing the well with an 8⅝-inch hole is $11 per foot. For a 6500-foot well the drilling expense amounts to about $71,500. The fuel requirement increases rapidly with depth of the well. Rotary batteries are requiring as much as 550,000 cubic feet of gas per 24 hours, and the total fuel requirement for completing a rotary well may average as high as 50,000,000 cubic feet of gas.

"An immense amount of water is required in drilling wells in this district. The amount varies somewhat with the depth of the hole. It is estimated that 3000 barrels of water per day per well are required for the first 2000 feet of hole, 2000 barrels of water per day from 2000 to 3000 feet; and 1500 barrels of water are required from a depth of 3000 to 6500 feet. This brings the total water supply up to 148,000 barrels of water to complete a well."

Pittsburg County Gasser Catches Fire

Tulsa.—Midwestern Oil & Gas Company's Benedict 1, SW SE SE Section 20-7-18e, in the Quinton gas field of Pittsburg County, Oklahoma, caught fire last week and several days later was still burning. Operators had moved in boilers to combat the fire with steam.

It is believed that the gas was ignited by sand being thrown against the temper screw, causing sparks. The well gauged 20,000,000 feet of gas just before the fire. It was drilling at 1847 feet in sand topped at 1792 feet.

Le Flore County

Tulsa.—Red Bank Oil Company Fee 1, SE SW NE Section 2, 3-9-24e, wildcat in Le Flore County, eastern Oklahoma, is slowly drilling below 5440 feet in a bad hole. The well recently found 15,000,000 feet of gas at 5401 feet, which caught fire and burned the rig down.

Water Intrusion Threatens Lime Wells at Oklahoma City

TULSA. — Continually increasing water encroachment upon the Arbuckle lime producing wells at Oklahoma City threatens at this time to cause a quick drop in production of these wells and retard the increasing potential production of the field. Nearly two-thirds of the wells producing from the Arbuckle lime are now making water, as a result of many additional producers showing water during the past week.

Handling of the large amount of water produced daily in the field has now become a major problem. Several plans are under way for taking care of the water output.

Production of the field dropped from around 100,000 barrels to 75,057 barrels and then to 46,314 barrels during the week. The drop was due mainly to new proration orders going into effect, which prorates the field's production 50 per cent. instead of 40 per cent., and to the smaller number of wells flowing. The day production fell to 46,314 barrels only 10 wells were flowing. Outlet facilities have been falling behind the production for about 10 days and practically all storage in the field was full which necessitated the shutting in of the wells until pipe line companies could catch up.

It seems that at least early predictions that the field would go to water are to be realized. The sudden increase in water is due largely to reduced pressure as a result of the completion of many new tests. The water intrusion is not confined to any one part of the lime producing area, but seems to be hitting it pretty generally. The lime area is now defined except to the northeast and east, with the latter expected to show little if any extension beyond the present boundary.

Since the Oklahoma City field is the serious market factor in the state, the water development offered encouraging news to the general crude oil situation.

Interest is now shifting to the Detrital sand zone along the south, southwest and southeast sides of the pool, and to the unknown area existing to the north of production. The stability and size of Oklahoma City's production now seems to depend upon the area covered by the Detrital zone wells.

With the steady march of work to the north, the play has been brought almost to the city limits, already a number of locations have been made on small subdivided tracts, and soon probably work will be started on some of the lots within the city, if permission is granted. Section 1-11-3w, composed of five-acre subdivision tracts, received several locations last week. The outcome of the Indian Territory Illuminating Oil Company, Hall-Briscoe's Holmes 1, in Section 10-11-3w, holds the key to the work in this area. At present it has a concrete job at 4750 feet, where it will try to make a new hole.

The southeast edge of the field continues to look very promising, as a result of the big Detrital sand completions made there a couple of weeks ago. Many new locations have been made and a quick development is promised.

The southwest edge does not look so promising, since several small Detrital sand wells appear to have been found. The direct south edge is also not overly promising from present indications, since most of the wells have been of only fair size.

Many Completions

The first week of the new year saw the field have its greatest period of activity as many new wells were completed. Several of which were important completions along the edge of the present producing area.

On the southwest edge of the field, Indian Territory Illuminating Oil Company and Foster Petroleum Corporation and Cromwell-Franklin Oil Company's Johnson 2, NWc Section 25-11-3w, flowed 946 barrels the first 18 hours. This well has very little gas. The next 5½ hours it made 555 barrels, giving it a potential rating of 1501 barrels. The producing horizon is the Detrital zone from 6414-28 feet.

Indian Territory Illuminating Oil Company and Foster Petroleum Corporation's Benjamin Mackey 1, NEc Section 26-11-3w, offsetting to the west Johnson 2, spouted for a short time but died out. Sand was 6342-60 feet, with total depth 6443 feet in lime. It has 2000 feet of oil in the hole and considerable water, which was loaded into the hole before drilling in. This is the southwest most test in the field.

A little more than one mile due north the Jack Shaffer, Hall-Briscoe Childs 1, SEc SE Section 14-11-3w, was deepened from its old total depth to 6364 feet in the Detrital sand. It made 11,799 barrels the first 24 hours, of which only about 12 hours was after deepening. It was doing 700 barrels per hour.

Cromwell-Franklin, Indian Territory Illuminating Oil Company and Foster Petroleum Company's Trosper Park 11, SE SE SE Section 12-11-3w, had the Arbuckle lime from 6100-6500 feet and in one hour made 312 barrels. It is also estimated making 9,000,000 feet of gas.

Prairie Oil & Gas Company and T. B. Slick completed Hiddleston 4, NWc SE Section 19-11-2w, on the east side of the field, for 575 barrels the first hour. Depth was 6549 feet in the Arbuckle lime.

About this time, the same company's Hiddleston 1, SWc SE Section 19-11-2w, commenced to cut up. The old well blew off a connection and ran wild for a day. It was necessary to open it into the air in order to make repairs.

Cromwell-Franklin, Indian Territory Illuminating Oil Company and Foster Pe-

Guaranteed

to take more punishment than any tool joint you have ever used

The power to withstand great punishment is built into Brewster A. P. I. Shouldered Tool Joints. In use by all drill pipe manufacturers, this same "V" type thread is naturally preferred because of its amazing durability.

Brewster A. P. I. Shouldered Tool Joints are scientifically Heat Treated, perfectly fitted and thoroughly inspected. All threads are automatically milled, giving absolute accuracy.

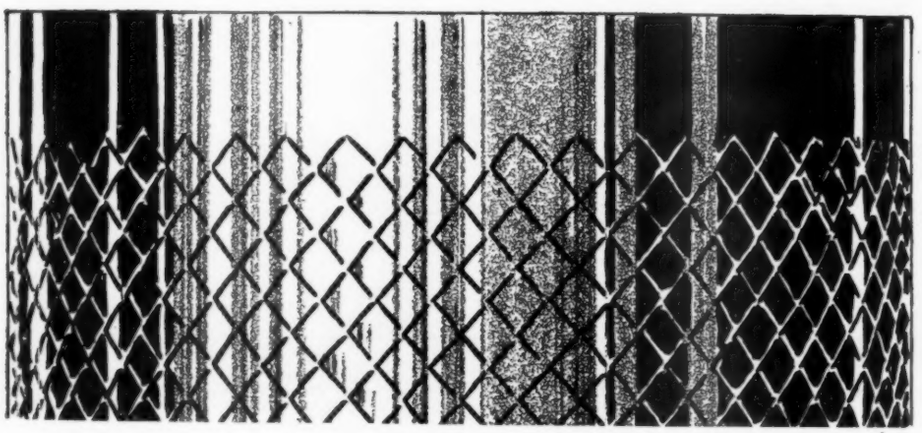
Our forgings are made by the largest maker of tool joint forgings in the United States, who have made 90% of the forgings for the trade in the last ten years.

Besides A. P. I. Shouldered Tool Joints, BREWSTER PRODUCTS include: Perfection Core Barrel; Chrome Nickel Drill Collars; Six Blade Rock Bits; Special Fish Tail and Gumbo Bits; Core Barrel Cutter Heads for both hard and soft formations — the hard formation cutter heads are faced with a substance of diamond-like hardness.

The Brewster COMPANY~INC.

SUCCESSORS TO OIL CITY IRON WORKS, INC.

Shreveport, Louisiana



A complete stock carried at these branch warehouses: Oklahoma City—Red Ball, Inc., 2-4 E. California St., Phone W-3680; Houston — 2000 Harrington St., Phone Capitol-3021. *Distributors:* Wilson Supply Co., Houston and Beaumont, Texas; Murray-Brooks Hdw. Co., Lake Charles, La.; T. T. Word Supply Co., Houston, Texas and Lake Charles, La.; The Ellis Iron Works, Inc., El Dorado, Arkansas.

Skelly Oil Company's Hoopes 1, NWc NE Section 31-11-2w, southeast outpost of the field. This well is by far the largest sand completion, having made a potential flow of 32,000 barrels during its first full 24-hour period. Indications are that the Detrital formation is leveling out in this direction, giving operators hopes that it may extend for some distance.

Average Cost of Drilling

Kenneth Covel, petroleum engineer for Indian Territory Illuminating Oil Company, recently compiled the average financial requirements for completion of a test in the Oklahoma City district. The average drilling time is 114 days to reach the 6500-foot level, including cementing and setting pipe, while the average cost per well is $155,000.

Covel listed briefly the approximate average drilling costs as follows:

"Cost of constructing slush ponds average $650; cost of digging cellars in the neighborhood of $225; making the average cost of excavation work at each location about $875. The general prevailing contract price for drilling the 12-inch or 12¼-inch rotary hole and completing the well with an 8⅝-inch hole is $11 per foot. For a 6500-foot well the drilling expense amounts to about $71,500. The fuel requirement increases rapidly with depth of the well. Rotary batteries are requiring as much as 550,000 cubic feet of gas per 24 hours, and the total fuel requirement for completing a rotary well may average as high as 50,000,000 cubic feet of gas.

"An immense amount of water is required in drilling wells in this district. The amount varies somewhat with the depth of the hole. It is estimated that 3000 barrels of water per day per well are required for the first 2000 feet of hole, 2000 barrels of water per day from 2000 to 3000 feet; and 1500 barrels of water are required from a depth of 3000 to 6500 feet. This brings the total water supply up to 148,000 barrels of water to complete a well."

Pittsburg County Gasser Catches Fire

Tulsa.—Midwestern Oil & Gas Company's Benedict 1, SW SE SE Section 20-7-18e, in the Quinton gas field of Pittsburg County, Oklahoma, caught fire last week and several days later was still burning. Operators had moved in boilers to combat the fire with steam.

It is believed that the gas was ignited by sand being thrown against the temper screw, causing sparks. The well gauged 20,000,000 feet of gas just before the fire. It was drilling at 1847 feet in sand topped at 1792 feet.

Le Flore County

Tulsa.—Red Bank Oil Company Fee 1, SE SW NE Section 2, 3-9-24e, wildcat in Le Flore County, eastern Oklahoma, is slowly drilling below 5440 feet in a bad hole. The well recently found 15,000,000 feet of gas at 5401 feet, which caught fire and burned the rig down.

Water Intrusion Threatens Lime Wells at Oklahoma City

TULSA. — Continually increasing water encroachment upon the Arbuckle lime producing wells at Oklahoma City threatens at this time to cause a quick drop in production of these wells and retard the increasing potential production of the field. Nearly two-thirds of the wells producing from the Arbuckle lime are now making water, as a result of many additional producers showing water during the past week.

Handling of the large amount of water produced daily in the field has now become a major problem. Several plans are under way for taking care of the water output.

Production of the field dropped from around 100,000 barrels to 75,057 barrels and then to 46,314 barrels during the week. The drop was due mainly to new proration orders going into effect, which prorates the field's production 50 per cent. instead of 40 per cent., and to the smaller number of wells flowing. The day production fell to 46,314 barrels only 10 wells were flowing. Outlet facilities have been falling behind the production for about 10 days and practically all storage in the field was full which necessitated the shutting in of the wells until pipe line companies could catch up.

It seems that at least early predictions that the field would go to water are to be realized. The sudden increase in water is due largely to reduced pressure as a result of the completion of many new tests. The water intrusion is not confined to any one part of the lime producing area, but seems to be hitting it pretty generally. The lime area is now defined except to the northeast and east, with the latter expected to show little if any extension beyond the present boundary.

Since the Oklahoma City field is the serious market factor in the state, the water development offered encouraging news to the general crude oil situation.

Interest is now shifting to the Detrital sand zone along the south, southwest and southeast sides of the pool, and to the unknown area existing to the north of production. The stability and size of Oklahoma City's production now seems to depend upon the area covered by the Detrital zone wells.

With the steady march of work to the north, the play has been brought almost to the city limits, already a number of locations have been made on small subdivided tracts, and soon probably work will be started on some of the lots within the city, if permission is granted. Section 1-11-3w, composed of five-acre subdivision tracts, received several locations last week. The outcome of the Indian Territory Illuminating Oil Company, Hall-Briscoe's Holmes 1, in Section 10-11-3w, holds the key to the work in this area. At present it has a concrete job at 4750 feet, where it will try to make a new hole.

The southeast edge of the field continues to look very promising, as a result of the big Detrital sand completions made there a couple of weeks ago. Many new locations have been made and a quick development is promised.

The southwest edge does not look so promising, since several small Detrital sand wells appear to have been found. The direct south edge is also not overly promising from present indications, since most of the wells have been of only fair size.

Many Completions

The first week of the new year saw the field have its greatest period of activity as many new wells were completed. Several of which were important completions along the edge of the present producing area.

On the southwest edge of the field, Indian Territory Illuminating Oil Company and Foster Petroleum Corporation and Cromwell-Franklin Oil Company's Johnson 2, NWc Section 25-11-3w, flowed 946 barrels the first 18 hours. This well has very little gas. The next 5½ hours it made 555 barrels, giving it a potential rating of 1501 barrels. The producing horizon is the Detrital zone from 6414-28 feet.

Indian Territory Illuminating Oil Company and Foster Petroleum Corporation's Benjamin Mackey 1, NEc Section 26-11-3w, offsetting to the west Johnson 2, spouted for a short time but died out. Sand was 6342-60 feet, with total depth 6443 feet in lime. It has 2000 feet of oil in the hole and considerable water, which was loaded into the hole before drilling in. This is the southwest most test in the field.

A little more than one mile due north the Jack Shaffer, Hall-Briscoe Childs 1, SEc SE Section 14-11-3w, was deepened from its old total depth to 6364 feet in the Detrital sand. It made 11,799 barrels the first 24 hours, of which only about 12 hours was after deepening. It was doing 700 barrels per hour.

Cromwell-Franklin, Indian Territory Illuminating Oil Company and Foster Petroleum Company's Trosper Park 11, SE SE SE Section 12-11-3w, had the Arbuckle lime from 6100-6500 feet and in one hour made 312 barrels. It is also estimated making 9,000,000 feet of gas.

Prairie Oil & Gas Company and T. B. Slick completed Hiddleston 4, NWc SE Section 19-11-2w, on the east side of the field, for 575 barrels the first hour. Depth was 6549 feet in the Arbuckle lime.

About this time, the same company's Hiddleston 1, SWc SE Section 19-11-2w, commenced to cut up. The old well blew off a connection and ran wild for a day. It was necessary to open it into the air in order to make repairs.

Cromwell-Franklin, Indian Territory Illuminating Oil Company and Foster Pe-

troleum Company's Trosper Park 3, SE SW NE Section 13-11-3w, commenced in a spectacular manner by bursting a plug from one of the separators. The first hour's gauge was 605 barrels, with a gas pressure of 30,000,000 cubic feet. Total depth was 6500 feet in lime. It made 2761 barrels in six hours after which it had to be shut in because of emulsion.

Coline Oil Company's Warren 1, SWc Section 18-11-2w, made 1149 barrels the first hour and was estimated making 50,000,000 feet of gas. It is a lime well, and did 2750 barrels in 2½ hours before ripping loose connections.

Indian Territory Illuminating Oil Company's Wheeler 2, SE NW SE Section 13-11-3w, the only well in the field which has ever cratered, made a mighty flow over the crown block after bailing. It knocked boards and stripped the derrick. Depth is 6508 feet in lime. The well made 5913 barrels in 5½ hours.

Shell Petroleum Corporation's Petty 6, NE NW NE Section 30-11-2w, was another completion and one that carried the producing area of the pool one location east. The well was estimated at 4000 barrels at 6504 feet in the Arbuckle lime.

Indian Territory Illuminating Oil Company's Jennings 1, NEc SE Section 13-11-3w, made 804 barrels the first hour and 10,298 barrels in 10 hours, after cleaning itself during which time it played havoc with things around the derrick.

Sinclair Oil & Gas Company's Stamper 4, NW SW NW Section 30-11-2w, had very little gas and started slopping over slowly after bailing down with a total depth of 6469 feet. It made only 310 barrels of oil with 150 barrels of water.

Logan County Well Has Gas and Oil Flow

Tulsa.—A new producer in the McCully area, northwestern Logan County, was that of Cosden Oil Company's Gardner 2, NW NE NW Section 31-19-4w, which started off at 12,000,000 feet of gas and 361 barrels of oil. It still has a fishing job at 5880 feet.

Shell Petroleum Corporation's Story 4, SE NE SW Section 30-19-4w, has been deepened to 5730 feet, where it has 2500 feet of oil in the hole.

Skelly Oil Company and Independent Oil & Gas Company's Elrod 1, NE NE SW Section 31-19-4w, total depth 6005 feet, flowed 181 barrels with some water and drillers are trying to pull the tubing.

Wentz Oil Corporation's Williams 2, NW NW NE Section 31-19-4w, flowed 199 barrels of oil with a decrease in water. It was completed in October for 2200 barrels in the Wilcox sand at 5945-53 feet and when pinched for proration started showing water. Operators are running the tubing to shut off the water. No. 3, Williams, NE NW NE Section 31-19-4w, is being abandoned at 6021 feet.

Voshel East Side Tests Fail to Find Oil at Usual Depth

WICHITA.—Indications were that the formations on the east side of the Voshel pool, McPherson County, central Kansas, were dipping in that direction. This was indicated by the Sinclair Oil & Gas Company's Voshel 1 and 2, Section 10-21-3w. These wells had gas but no oil in the chat horizon. They will be drilled ahead to the Viola lime and Wilcox sand horizons around 3300 feet. Number 1, in SW NW NW Section 10-21-3w and No. 2, in SWc NW, were both showing about 5,000,000 feet of gas at around 3000 feet in the chat. These wells are in the area that is yielding production from the Viola lime and Wilcox sand horizons.

Two other disappointments were found in the Voshel area during the week. Derby Oil Company's Krehbiel 1, NWc NE SW Section 34-21-3w, which missed the chat producing horizon is drilling ahead below 3350 feet. The offset to the west, Gypsy Oil Company's Kinney 1, has been shut in for a small gas well in the chat formation. These two wells are midway between the Viola and Wilcox sand producing area and the Slick-Pryor & Lockhart Grattan 1, to the north, which is producing from the chat horizon.

Derby Oil Company's Stuckey 1, NEc SE Section 9-21-3w, original deep horizon producer in the area, is not showing improvement after being deepened to 3328 feet. No production test can be made of the well under the proration rules. Empire Oil & Refining Company's Voshel 2, SEc NE Section 9-21-3w, topped the Kansas City lime at 2350 feet and has suspended drilling to run pipe.

Despite these poor results the field experienced its greatest activity during the week from the same point of new operations, when approximately 10 new tests were staked.

The wildcat test on the Otte farm of the Kansan Oil Corporation (Sullivan & Melrose), SW NW Section 21-20-1w, north of the Voshel field and south of the Ritz pool in McPherson County, found oil and gas in the chat horizon at 3006 feet and it looked as if it might open another new field in the vicinity. It was making 2,000,000 feet of gas and flowing six barrels of oil and water per hour. Water is generally found in the top of the chat in all tests in the Ritz area, and casing is to be run in the Kansan Oil Corporation's test.

Wildcat Notes

Mid-Kansas Oil & Gas Company, Liggett et al's test on the Regier tract in the C SE NW SE Section 2-23-2w, has 2,000,000 feet of gas at 3226 feet, a showing of oil at 3281-83 feet and a hole full of water at 3295 feet. After deepening slightly it has lost a string of tools in the hole.

Gypsy Oil Company's Hudson 1, C SE NE Section 27-24-10w, one mile south of Sylvia in western Reno County, got a hole full of water in the Wilcox sand at 4048 feet.

Near Andale, also in Reno County, Empire Oil & Refining Company has some oil and a hole full of water in Beltz 1, NE NW Section 36-25-4w.

Continental Oil Company's Sensroth 1, NWc Section 25-28-4w, a wildcat test southeast of Cheney in western Sedgwick County, is being watched as it nears the Wilcox sand. The last report was that it was underreaming at 4128 feet. The Wilcox sand is anticipated within the next 125 feet.

Empire Oil & Refining Company will drill another test south of Russell in Russell County, western Kansas, and close to the Ochs wildcat producer recently brought in by Empire Oil & Refining Company and Prairie Oil & Gas Company.

Southbrook Oil Corporation's Joseph 1, Section 25-24-3e, southwest of Potwin, Butler County, pumped 151 barrels the first 13 hours. There was an accumulation of oil in the hole when it commenced pumping. The oil is coming from a sand, probably the Burgess.

The largest gas well in Kansas is Mid-Kansas Oil & Gas Company's at the present time and said to be the largest within the last five years. The well is three miles northwest of Burden, in Cowley County, on the Harris farm, in Section 21-31-6e. It is estimated capable of making 50,000,000 feet of gas. It commenced belching rocks and mud from the hole at 2215 feet. The flow was brought under control, however, without damage to the rig. The purpose of the test was to test the Wilcox sand in the Burden area and the gas will be cased off to go deeper.

Fleeger et al's Ashcraft wildcat in Section 16-28-7w, two miles southeast of Kingman, in Kingman County, has a hole full of water at 4343 feet.

Northwest of Wellington, in the SE of Section 29-31-1w, Sumner County, southern Kansas, Sunray Oil Company has made location for Peasel 1, a northwest offset to Darby Oil Corporation, T. B. Slick and other's discovery well which is making 50 to 75 barrels per day. Carter Oil Company has laid a line to the well and is now ready to ship oil from its loading rack north of Wellington.

Great Falls, Montana.—Argo Royalties Company of Denver, a subsidiary of Midwest Refining Company, recently took over the remaining royalties in Montana Pacific Oil Company holdings in Pondera and other fields in Montana. Montana-Pacific Oil Company controls proved acreage in Bannatyne and Pondera, and unproved in several promising structures in various parts of Montana. It has a monthly income estimated at $4000 or thereabouts.

North and West Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

Shell Purchase of Taylor-Link Pipe Line Offers Relief

SAN ANGELO.—Crude market relief for producing companies in the Taylor-Link field, Pecos County, is to follow Shell Petroleum Corporation's purchase of the pipe line system of Landreth Production Corporation, extending from the field to a tank farm and car rack at McCamey. The field is producing about 7000 barrels daily, including about 4500 barrels daily on properties of Landreth and associates, but the bulk of this oil has been going into field storage provided by Landreth Production Corporation since Humble Oil & Refining Company limits oil purchases and runs to 500 barrels daily from each producing company.

Shell Petroleum Corporation is acquiring 14 miles of eight-inch line, field gathering lines, pump station and four 80,000-barrel steel tanks near the station, but is not taking on the ten 80,000-barrel steel tanks recently erected at McCamey by Landreth Production Corporation. About 145,000 barrels of crude are in storage at the McCamey farm, and this oil will be retained by Landreth Production Corporation to apply on crude contract held with Big Lake Refining Company, while Shell Petroleum Corporation has agreed to purchase the 178,000 barrels of crude in storage near the field.

Landreth Production Corporation is assured of an adequate market outlet for its Pecos County crude as result of the deal with Shell Petroleum Corporation, as the latter agrees to run and purchase up to 15000 barrels daily. Shell Pipe Line Company is scheduled to take possession of the line to the Taylor-Link field late this week, and tie same into its McCamey trunk line terminal.

Shell Pipe Line Company has two 10-inch trunk lines leading out of West Texas to be filled, and the recent production declines in Winkler County has caused a slump in oil movement through these carriers.

The tapping of the Pecos County field will partially offset the loss sustained lately in oil runs. Registering an initial flow of 20 barrels of 34 gravity oil per hour, Humble Oil & Refining Company et al's York 1, located in the northeast extension of the Connell pool, Ector County, developed a larger production than the discovery well of the area. This flow was made from 16 feet of lime pay bottomed at 3771 feet, but failed to increase early this week when the hole was deepened to 3785 feet.

The well gauged 405 barrels during the 24-hour period ending Tuesday morning, and arrangements have been made to install three-inch tubing to apply back pressure. Gulf Pipe Line Company has agreed to run about 300 barrels daily from this new well and its offset to the north.

Ector County's second important producer began flowing late Saturday night after drilling about 10 feet into the oil saturated lime, which was encountered at 3755 feet, and drilling was temporarily halted at 3771 feet. The initial gauge on this well was an average of 20 barrels of oil per hour, flowing by heads. York 1 is located 330 feet south of the center of the north line of Section 16, Block 44, T. & P. Survey, T.-3s, and a direct offset to the discovery well of the northeast extension area. The first well was completed in October on the Kloh et al land from broken lime at 3715-44 feet by Humble Oil & Refining Company and associates making 380 barrels initial. A string of three-inch tubing was installed after the well flowed throug 6⅝-inch casing for a week, and then back pressure applied to limit production to about 100 barrels daily. Gulf Pipe Line Company has been running this oil via a small line built from the well to its Winkler County trunk line system.

Penn Oil Company and Atlantic Oil Producing Company possess an undivided one-sixth interest each with Humble Oil & Refining Company in the Kloh and York wells and six solid sections of surrounding acreage, but the latter assumed operating control after Penn Oil Company drilled the first well for a one-third interest in the block. Atlantic Oil Producing Company acquired one-half of the Penn Oil Company's interest before a completion was made.

The difference in depths that oil pro-

Gray County Proration Plans Not Fully Realized

AMARILLO, Texas. — Failure of Gray County operators to obtain unanimous support on their plan of proration in the Bowers-Jackson and Finley-Brown fields will result in the output of the county taking a slower decline than originally anticipated. The county is credited with having averaged 64,270 barrels daily during the past week, representing a loss of about 1500 barrels, but the full effect of the 20 per cent reduction will not be known until the next weekly averages are compiled.

New production in Gray County was very much in evidence during the past week, and five completions are credited with having a combined initial yield of 4690 barrels. White Eagle Oil & Refining Company et al's S. Faulkner 3 topped the list with an estimated flow of 1600 barrels of high gravity oil and 25 million cubic feet of gas at 2800-40 feet. Magnolia Petroleum Company's Wright 1 succeeded in reviving the gas production, and has been completed making 1000 barrels initial and six million feet of gas at 2825-38 feet. The Texas Company's G. H. Saunders 17 blew in making 1050 barrels of fluid, 10 per cent water, at 2495-2523 feet, but declined to a small flow before the end of the week. The same company's Saunders 19 is cleaning out and swabbing 80 barrels daily through bridge formed after a shot of 180 quarts at 2510-84 feet, and its Cook-Faulkner 8 was making 300 barrels oil and heavy gas flow while drilling into granite wash pay formation at 2675-87 feet.

Danciger Oil & Refining Company and Champlin Refining Company's Cook-Faulkner 3 has been completed making 400 barrels at 2760 feet. Danciger et al's semi-wildcat test on the M. Davidson land, located in the southeast quarter of Section 86, Block B-2, and south of the Bowers-Jackson field, is showing for a commercial producer from lime at 3068-3121 feet. A pipe line connection has been promised by the Toronto Pipe Line Company. Gulf Production Company's J. M. Saunders 3 flowed 430 barrels of oil on 21-hour gauge at 3045 feet, and is to be deepened.

duction was found in the Kloh and York wells is reported to be due to a crooked hole in the latter. Kloh 1 logged the top of the brown lime at 2425 feet, with a surface elevation of 2925 feet, and the south offset producer picked up the lime at 3410 feet, with an elevation of 2921 feet.

Five tests are under way within a two-mile radius of Ector County's two flowing wells, including two each for the Landreth Production Corporation and Cosden Oil Company, and one by Llano Oil Company et al. The University land located between the late completions and the original group of small producers owned jointly by The Texas Company and Cosden Oil Company on the Connell ranch. This new drilling will require enough offsets to qualify for a small boom should successful completions result, and the first of the group to reach the expected oil level is Landreth Production Corporation's University 1-S, which has cemented 6⅝-inch casing in lime at 3346 feet. This test is located 990 feet from north and 330 feet from east lines of Section 2, Block 35, and had cemented the final string of pipe within a month after spudding. This is fast drilling for cable tools in lime areas, and is probably better than the average to be expected of future tests. Company tools are being used, with H. H. Watson, superintendent in charge.

An extension to the southwest portion of the Yates field was in prospect early this week when Transcontinental Oil Company and Arkansas Fuel Oil Company's J. C. Matthews-Smith 1 cemented casing on top of good show oil and gas at 1447 feet, or three feet in the brown lime horizon. This test has a surface elevation of 2612 feet, and is located near the center of the east line of Section 10, Block 194.

Big Lake Oil Company is trying to deepen two of its deep producers on the University lease, Big Lake field, and is expecting to have a fourth test on production this week, as its University 1-C is drilling in black lime at 8210 feet. University 2-C has killed flow of oil and gas to deepen from pay at 8187-8201 feet, and similar steps have been taken on University 3-C, which has been producing for a number of weeks at 8375-85 feet. University 4-C is being allowed to flow 200 barrels of 68° gravity oil and 4¼ million cubic feet of wet gas from top of sandy-lime at 8200 feet.

Van Operating Committee Starts Additional Tests

CORSICANA, Texas. — Two new tests were ordered drilled by the Van field unit plan operating committee late last week on leases of Sun Oil Company and The Texas Company to the northeast of the completed wells, and drilling is now underway on four other tests. Should commercial production be obtained by these six tests, the field will be allotted eight or more new locations to take care of necessary offsets created by their completion.

Sun Oil Company completed title work on its I. W. Thompson 41-acre lease, located a short distance to the northeast of the quartet of producers in the field, and location has been staked 600 feet from the south line and 313 feet from the west line of the tract. The Texas Company's W. White 1 has been located 626 feet due west of the above test, or equal distance from the east and west lines of the White 35-acre tract, M. Gross Survey.

Fast progress is being made in drilling Pure Oil Company's R. L. Wells 1, located about 1500 feet southwest of the discovery well, and early this week the test was below 1400 feet. Pure Oil Company's A. F. Magers 1, located about one mile north of production, has cemented surface pipe. The Texas Company's I. P. Tunnell 1-A, six-acre lease, located 4000 feet southeast of production, is drilling below 1200 feet, and Shell Petroleum Corporation's E. L. Fowler 1, located on a line between the above test and production, has resumed drilling after cementing surface pipe at 301 feet. Humble Oil & Refining Company is a member of the unit plan, but has not been allotted a location for immediate drilling. However, a 90-day drilling obligation was assumed several weeks ago by Humble Oil & Refining Company in clearing up title to the W. Freeman 31½-acre tract, located due east of production. A cash payment of $32,500 and an additional $15,000 payable out of oil was given along with the drilling obligation to obtain an outstanding one-fourth interest in the tract.

Pure Oil Company's field organization is carrying on all development work and crude marketing in the Van field, in accordance with the unit plan, and actual drilling of the wells is being done by contractors, with fuel, water and casing furnished. Pure Oil Company has provided two 55,000-barrel steel tanks, and 28,000 barrels of lease flow tankage for the accumulation of oil produced in excess of that transported daily by a 19½-mile 10-inch line to a 70-car capacity rack at Chandler. This storage is reported to be nearly 50 per cent. filled.

Production of the four producers in the Van field was throttled down on the afternoon of January 1 by changing from 9/16 to 7/16-inch chokes on Shell Petroleum Corporation's two wells on the Tunnell lease, and on Pure Oil Company's Thompson 1. Pure Oil Company's discovery well on the Jarman tract remained on its two 3/64-inch chokes, as its output is considerably less than the others. Jarman 1 is flowing about 830 barrels daily, while the other three offsets are pinched to an average of about 1050 barrels daily each, thus holding the output of the field to approximately 4000 barrels. This represents a cut of between 2000 and 2500 barrels daily. Pure Oil Company has contracted to sell 2500 barrels daily in tank cars to the Shreveport plant of the Louisiana Oil Refining Corporation, and is reported to be negotiating for additional short time contracts with refining plants in the Louisiana-Arkansas district. The surplus production will be transported in cars to the Smiths Bluff plant of the Pure Oil Company, while additional field storage is slated to be erected shortly.

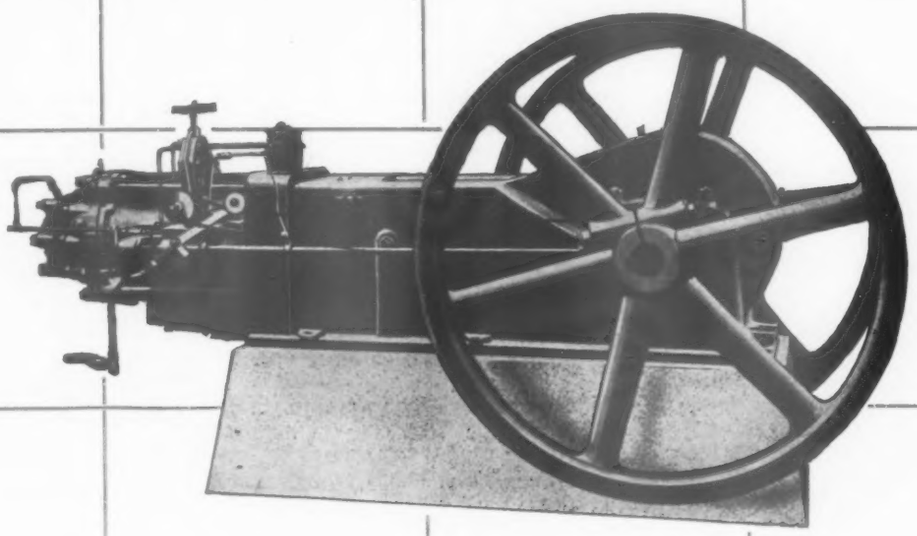
Seven wildcat tests have been started, or contracted to be drilled in Van Zandt County on the strength of the county entering the ranks of oil producing counties of the state, but only one of the group of wildcats has made any drilling progress. T. G. Shaw, Fort Worth operator, was drilling below 1200 feet early this week on his Huddle 1, J. Evans Survey, located about four miles southwest of Van field. DeArman Brothers of Corsicana are drilling this test on contract.

Lea County Well at Lower Depth Opens More Territory

ARTESIA, New Mexico.—The A. E. Meyer mineral permit on government land in Lea County scored a 50-barrel per hour flowing well for the Continental Oil Company and The California Company January 2 after successfully casing off approximately 70 million cubic feet of gas from upper horizon. This producer drilled an unusual depth below the top of the brown lime, which was logged at 2995 feet, before encountering commercial oil production at a total depth of 4001 feet, and the oil is reported to test 34° gravity. Since no pipe line connection, or local crude market is available, the well has been shut in.

The A. E. Meyer 1 opens considerable new territory for oil and gas development, as it is located 990 feet each way from the southwest corner of Section 17-21s-36e, and about two and one-half miles north of the nearest oil or gas production. Continental Oil Company owns 75 per cent interest in the well and permit, while the remainder is owned by The California Company, subsidiary of Standard Oil Company of California. Meyer 1 cased off the heavy gas flow, which was encountered at intervals between 3240 and 3900 feet, by cementing 6⅝-inch pipe with 100 sacks at 3910 feet. Rotary equipment was installed at 3278 feet, and also used to complete the well. The gas shut-off was successful to the extent that only about one million cubic feet accompanied the flow of oil.

Further deepening of Texas Pacific Coal & Oil Company's State 2, a wild-



Here's the Franklin Valveless O. F. Oil Engine — trim, powerful, sturdy, economical — an engine as good as it looks.

Franklin Valveless Engines were selected by the Oil Well Supply Company as the *best* slow speed, heavy duty, internal combustion engine made — a powerful endorsement.

The O. F. Oil Engine is engineered for oil field loads and oil field conditions and delivers Diesel economy at all times —readily convertible for gas.

Lubrication positive and ample. 3-point force feed on cylinder — balance splash system.

Pistons of O. F. are air cooled — only standard threads used—no special wrenches required. Fuel pump is eccentric driven, running in bath of oil. Engine automatically stops if belt breaks.

There's a Franklin Valveless Engine in the size you need—and built for every load condition. We invite the critical and hard boiled power user to investigate the Franklin Valveless Engine — will you accept the invitation?

Franklin Valveless Engine Company

Franklin, Pennsylvania

cat producer in Section 21-23s-36e, boosted the flow to a new peak of 650 barrels of fluid, five per cent. water, during the 24-hour period ending 7 a. m. January 6. This well has a total depth of 3757 feet, and was originally completed middle October making 250 barrels of 28.5° gravity oil daily at 3705-12 feet. The Texas Pipe Line Company has made connection with the well, and surplus production will be diverted to a nearly 55,000-barrel steel tank erected by the well owner. J. R. Teague, who lives at Kermit, Texas, is field superintendent in charge of this producer.

The Lea pool, which has established records for Lea County with its unusually large pumpers from the 3700-foot lime horizon, is slated to add three new producers before the end of the week on Texas Production Company's State A and B leases. This company has cemented 6⅝-inch pipe on the trio of tests at about 3615 feet, and each offset completed wells to the north. Cranfill-Reynolds Company et al's State 3-B, Section 2-21s-33e, swabbed an average of 70 barrels per hour on 11-hour test from lime at 3776-80 feet, and then pumped 1080 barrels during the first 17-hour gauge taken for final completion. Texas Production Company is buying this oil at West Texas gravity scale prices along with all other production in the field, with The Texas Pipe Line Company handling same direct to the Gulf Coast.

The Jal field has added two new locations as result of the recent completion of Empire Gas & Fuel Company's W. A. Lindley 1, C NE SE Section 14-25s-36e, flowing 1500 barrels fluid, 20 per cent. water, daily at 3340-80 feet. The above company has authorized the drilling of Lindley 2, located 330 feet from east line and 2310 feet from the south line of the same section to afford a diagonial offset to Continental Oil Company's Sholes 2, which is required by lease contract to observe similar distance from the property line. Humble Oil & Refining Company is rigging up on Koonce 1, located 330 feet each way from the southeast corner of the north one-half of Section 14-25s-36e, such being an offset to the above new tests.

Actual construction work was started January 1 on the extension of the Texas New Mexico Railroad Company's line into Lea County from the south, and the route of the line will serve the bulk of the operating companies in the county with the first rail connection. The line is to go north, via Hobbs, thence to Lovington.

Houston.—Humble Oil & Refining Company has completed Sugarland Industries B-2 in the Sugar Land field, Fort Bend County, at 3772 feet as an 800-barrel flowing well. That is the only company operating there. Bankers Mortgage C-2 was preparing to drill plug at 3390 feet early this week. Brazos Farms 11 is drilling at 1220 feet, and No. 12 is swabbing with screen set at 3782 feet. Bankers Mortgage B-2 is rigging up.

Several Oklahoma Areas Hold Interest

Tulsa.—Interest in the new Harris pool, near Konawa, southeastern Seminole County, was centering in several early anticipated completions.

Foremost among these was the McCulloch Oil Company's Snyder 1, SE SW NE Section 8-6-6, nearly one-half mile northwest of production. This well had sand at 2807-40 feet, and blew in for 15,000,000 feet of gas. The hole was filled with water and it was to be deepened. Total depth at this time was 2850 feet.

Independent Oil & Gas Company's Indian 1, SEc NE Section 8-6-6, cored shale from 2817-44 feet, where it entered a brown lime formation. Sand was expected at any time.

E. L. Harris, Wilcox Oil & Gas Company and Droppleman Drilling Company shot Harjoche 1, SE NE SE Section 8-6-6, discovery well which is producing through ripped pipe, and increased its output to 880 barrels from around 250 barrels. The next 24 hours it had fallen off to 540 barrels, then to 362 barrels. The same parties deepened Harjoche 2, NE SE Section 8-6-6, one foot to 2867 feet and production increased to 1875 barrels.

Empire Oil & Refining Company and Champlin Refining Company's Skinner 1, SW NW SW Section 9-6-6, is swabbing slightly more than 1000 barrels at this time.

Additional locations increased activity in the area to more than 25 operations.

The Allen-Sasakwa area in southern Seminole County was featured by Sinclair Oil & Gas Company's Jefferson 5, NW NE SE Section 23-5-7, which flowed 3155 barrels after a 20-quart shot in the Wilcox sand where it has a total depth of 4229 feet.

In the Sasakwa pool proper, Pure Oil Company completed two wells. Bates 6, SE NE NE Section 13-6-7, was drilled to 4155 feet in the Wilcox sand, where it flowed 1478 barrels. Bates 7, NE SE NE Section 13-6-7, had the Wilcox sand from 4165-72 feet and swabbed and flowed 139 barrels the first two hours.

Pure Oil Company's Latimer 1, NE NW NW Section 21-7-4, on the south edge ot the St. Louis-Pearson area, is a new Simpson sand well. It flowed 175 barrels of oil in six hours from 4125 feet. It has been pinched in to 50 barrels daily.

Another failure was added to the north extension of the St. Louis pool when Prairie Oil & Gas Company's Bodkin 1, SW NE NE Section 1-7-4, had a hole full of water in the Wilcox sand at 4490-98 feet.

Prairie Oil & Gas Company's Meyer 1, NW SW SE Section 32-7-4, a southeast extension to the Pearson field, swabbed 30 barrels of oil in 12 hours from the Simpson sand at 4195-4217 feet.

Mid-Continent Petroleum Corporation's Rogers 6, NE SW SW Section 5-9-5, north of the Earlsboro townsite, was shut down with 500 feet of water in the hole from the Wilcox sand at 4330-33 feet.

Shell Petroleum Corporation, Pouder and Pomeroy's Hopper 1, NW SE NE Section 19-9-6, East Earlsboro field, flowed 4921 barrels after a small shot.

Prairie Oil & Gas Company's Standback 1, SE NW SE Section 18-8-7, a community test, east of Bowlegs in Seminole County, encountered the Wilcox sand at 4154 feet and at 4158 feet had a show of oil and gas with water in the hole, and was to be plugged back.

Magnolia Petroleum Company's Jackson 1, SW SE SE Section 14-8-7, near Lima, had sand at 3201 feet, where it filled up 1200 feet. It was to be swabbed.

Humble

Houston.—The Texas Company on January 4 completed Dunman 4 at Humble, as a 1500-barrel producer at 5144 feet, giving that field the only new oil of the week. Several days earlier The Texas Company had abandoned House 23 in the north part of the field at 4150 feet.

Production at Humble during the week ending January 4, 1930, amounted to 13,650 barrels daily.

The Texas Company's Dunman 2 ran tubing with screen set at 5061 feet; Dunman 3 has set screen at 5160 feet; C. O. & G. Company 30 is a derrick; Atlantic-Gulf 1 is a location; Koehler 36 is drilling at 360 feet.

South Texas Petroleum Company's Morris 12 will be put on the beam; No. 13 is running tubing, with screen set at 5416 feet; Lee 2 is in lime at 4475 feet. West Production Company's Foster Lumber Company 2 is drilling gumbo at 1408 feet.

Humble Oil & Refining Company's Williams 7 is bailing at 5380 feet; No. 8 is a derrick; No. 10 has set 9⅝-inch casing at 4588 feet; and Trahan 2 is drilling shale and lime at 3700 feet.

Lease Requires Opening of Kettleman Well

Los Angeles. — Due to lease requirements Petroleum Securities Company's Felix 1 on the North dome at Kettleman Hills probably will be placed on production some time this month. This action would call for a new arrangement on conservation details and probably means that a much larger production would be marketed from the field. A technical committee of 11 has been appointed to work out development details.

Should Felix 1 be tested and produced, several offsets will be produced and it is feared that the whole conservation scheme will be endangered if a satisfactory plan is not formulated. It now looks as if the field will be allowed to produce additional oil.

The nine operators at Carpenteria, an unproven structure, have entered into the first unit plan of operation ever completed in California and Continental Oil Company will drill a common test on one of the Tideland permits which are included in the plan.

Gulf Coast Field Developments

JACK LOGAN, *Staff Representative, Houston, Texas*

Deepest Producer at Barbers Hill Brings Largest Flow

HOUSTON.—Probably the most important development in the Gulf Coast oil country during the past week was the discovery of deep production on the northwest flank of Barbers Hill dome when Humphreys Corporation's Kirby A-8, a wildcat from the standpoint of deep sand exploration, came in flowing 34 (corrected) gravity pipe line oil at the rate of 5000 barrels daily from sand at 6397-6416 feet. This is the third deepest producer of the Gulf Coast, the two that are deeper being Yount-Lee Oil Company wells at Evangeline (Jennings), Louisiana, 7300 feet and 7450 feet deep, respectively.

The new Barbers Hill well came in January 4, 1930, after only one joint of drill pipe had been removed from the hole following setting of screen and liner, and it is flowing now through and around the drill pipe. Although the well began producing around 200 barrels per hour through two three-eighths-inch chokes, and showed 500 pounds pressure, the flow subsequently increased when larger chokes were substituted for those originally used. During the 24 hours ending Monday morning, January 6, the well produced 7990 barrels of oil. In the meantime two five-eighths-inch chokes were used part of the time, but later the well was flowing through one one-inch and one five-eighths-inch choke, and had 625 pounds pressure. Temperature of the oil at the well was 80 degrees.

Flow Increased

During the 24 hours ending at seven o'clock Tuesday morning, January 7, the well gauged 8203 barrels, and at that time was flowing through two one-inch chokes which regulated the flow from outside the drill pipe, showing 400 pounds pressure, and through one five-eighths-inch choke on the line from the drill pipe, showing 625 pounds pressure there.

The bottom of this hole is at 6416 feet, as stated above. Casing in the hole includes 1414 feet of 10-inch, and 5489 feet of 7⅝-inch pipe. Below the 7⅝-inch casing is a string of 5 3/16-inch liner, with one joint of screen on the bottom of the liner. When the well suddenly came in, it began flowing not only through the four-inch drill pipe which was used in handling the liner and screen but also found a weak point somewhere in the 7⅝-inch casing, and broke through, with the result that some production began escaping to the surface by passing upward between the 7⅝-inch and the 10-inch casing. Oil which escaped in that way was promptly picked up by a pump and saved. It is not known definitely where the leak is, but it is believed to be near the surface in the second joint of the 7⅝-inch pipe; and hope was expressed that the leakage might be completely eliminated without interfering with the production of the well.

Near Shallow Pumpers

The new Humphreys Corporation producer is located only a short distance farther from the dome than several relatively shallow producers. It is approximately 300 feet northwest of the nearest producer, Humphreys Corporation's A. E. Barber 1, the discovery well of the northwest flank of the dome. That well was drilled jointly by Mills Bennett and the Humphreys Corporation, and was completed May 14, 1926, for 500 barrels daily at 2245 feet. It is still a small pumper. There are three other pumping wells nearby, producing from around 2200 feet, and several former producers at that depth have been abandoned. From the new Humphreys Corporation producer to the nearest established 5000-foot production of either the northeast or the south flank of the field is about 10,000 feet, or one-third the distance around the dome.

The present deep producer began drilling May 20, 1929, and as it began producing January 4, 1930, the time required for drilling was 230 days, or 7½ months. It is interesting to point out the co-incidence that the new Humphreys Corporation

Humphreys Corporation's Kirby A-8, new deep sand producer at Barbers Hill is so close to the road to Houston that the highway was blocked off while the well was giving its initial performance. The driller, M. C. Catchings, is the man in the picture

well came in on exactly the same date in 1930 as the completion date of Humphreys Corporation's Kirby 1-C, finished in 1929 as the first of numerous prolific, deep producers drilled by that company on the east end of the east flank of the dome. In each case the land on which the well was located was owned by Kirby Petroleum Company.

Kirby Owns Land

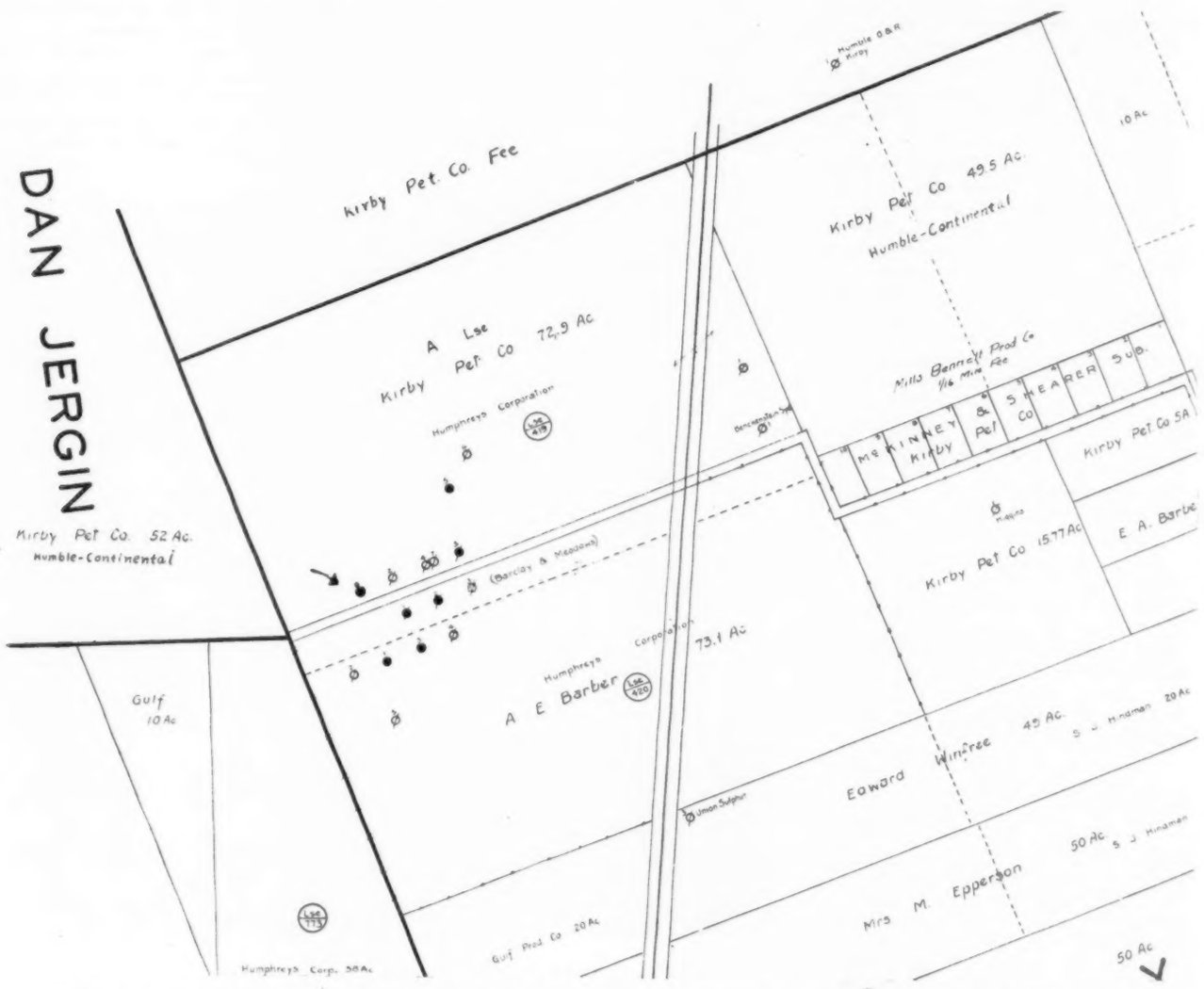
Kirby Petroleum Company has one-sixth royalty in the 72-acre tract on which the new Humphreys Corporation producer is located, and also owns in fee lands bordering that 72-acre tract on three sides. The large tract bordering the 72-acre discovery tract on the north is not leased. Those on the other two sides, like the discovery tract, are under lease with one-sixth royalty applying. The 52-acre tract to the west and the 49.5-acre tract on the east are both leased to Humble Oil & Refining Company and Continental Oil Company, each of which owns one-half interest in the lease. Humphreys Corporation has under lease the acreage directly south of the discovery tract, that is, the narrow Barclay & Meadows tract bordering the discovery tract all along the south line of the discovery tract, and the 73-acre A. E. Barber tract south of that narrow strip. Humphreys Corporation is also protected still farther down the flank of the dome by virtue of holding lease on the long 38-acre Winfree tract, which extends a long distance south of the present large producer.

Barbers Hill is a particularly interesting salt dome field — one which owes its importance strictly to successful deep drilling. From 1902 to 1928 the net result of activity in the field was the drilling of 153 tests, including 111 dry holes, discovery of first commercial production in 1918, and recovery during 1918-1928 of scarcely a million barrels of oil from depths less than 4000 feet. On October 9, 1928, however, Mills Bennett Production Company completed Smith 1 on the northeast flank of the field for 4000 barrels daily at 5272 feet, discovering the mile-deep production which has placed Barbers Hill among the largest producing areas of the Gulf Coast. During 1929 the field was extended along nearly all of the east and south flanks, and in production it rose into second place. It finally crowded Spindle Top out of first place for a while. Prior to completion of the new well of Humphreys Corporation, however, Spindle Top was again leading the Coastal fields in production, with a daily output of approximately 18,000 barrels daily, and Barbers Hill was the runner-up with 15,000 barrels daily. Completion of the Humphreys Corporation well, therefore, boosts Barbers Hill again into first place, at least temporarily.

Drilling Activity

Approximately a score of rigs are in operation now at Barbers Hill. On the north flank of the dome Mills Bennett Production Company has a test which is virtual wildcat, and which is now more interesting following completion of the Humphreys Corporation producer. It is Barber 2, drilled originally to 5625 feet. Survey of the hole showed it to be crooked, however, and the well is being straightened, drilling now in new hole at 3900 feet. Mills Bennett Production Company's Barber 1, just north of No. 2, had numerous favorable showings, but was not finished a producer. In the north part of the east flank of the field Mills Bennett Production Company is preparing to pump Hamman Armstrong 3 at 5166 feet. That company's G. W. Collier 2 has set casing to test oil show at 5330-65 feet; Means 2 is drilling rock at 1750 feet; Wilburn 2 is drilling shale at 3520 feet.

Sinclair Oil & Gas Company's McKin-



Portion of Barbers Hill area showing location of Humphreys Corporation's Kirby A-8 and surrounding lease ownership

ney Fee 1 has been abandoned at 5384 feet after testing salt water; McKinney 2 is rigging up; Wilburn 2 is drilling lime at 4850 feet; J. Wilburn 3 is rigging up, and J. Wilburn 4 is a derrick.

Republic Production Company's Kirby 3 has failed to make a satisfactory pumper at 5335 feet. The Texas Company is cutting screen, preparing to deepen Lawrence 1 from 5260 feet.

Humphreys Corporation's Kirby C-2 is drilling shale at 3867 feet; McLean 1 is drilling lime and shale at 4484 feet; Ilfrey 2 is drilling at 1500 feet; Morgan 1 is drilling gumbo at 1420 feet.

Yount-Lee Oil Company's Chambers County Agricultural Association 10 on the south flank of the dome has an oil showing in sand at 4423-44 feet; No. 11 is coring sand at 4607 feet; Phillips 2 is drilling clay at 164 feet.

Sun Oil Company's Wilburn Fee 3 is drilling shale and lime at 4640 feet; McKinney Fee 3 is drilling shale and lime at 5254 feet; and Chambers County Agricultural Association 4 is drilling sand and lime at 2013 feet.

Deepest Producing Well Of Gulf Coast

HOUSTON.—A new record for deep production along the Gulf Coast was established during the past week when Yount-Lee Oil Company, outstanding pioneer in deep drilling in the salt dome country, completed Houssiere-Latrielle 7 at Evangeline (Jennings), Acadia Parish, Louisiana, as a 1500-barrel well at 7447 feet.

Seven-inch casing is set in the well at 7100 feet, and five joints of five-inch screen were set in the sand. A string of 2½-inch tubing was run, and the well came in flowing around 750 barrels daily, but later increased to 1500 barrels daily. Early this week it was reported that the well was flowing some salt water along with the oil, but the report could not be confirmed.

Location of this well is 5725 feet east and 1070 feet north of the southwest corner of Section 47-9s-2w. It is in the southeastern edge of the Evangeline field.

The new well is the second completed by Yount-Lee Oil Company in the deep sand at Evangeline. The well which discovered that sand is Houssiere-Latrielle 6, which came in June 1, 1929, flowing 5000 barrels 33 gravity pipe line oil daily through a one-quarter-inch and three-sixteenths-inch chokes from total depth of 7290 feet. At present, after being on production over seven months, that well is still flowing around 1500 barrels of oil daily. Its location is 3600 feet southeast of the nearest old production at Evangeline.

The new producer, Houssiere-Latrielle 7, is 500 feet north of No. 6, and is not only 160 feet deeper, but is also reported to be producing an altogether different grade of oil—10 degrees lower in gravity.

Yount-Lee Oil Company took over leases along the edges of the Evangeline field primarily for the purpose of testing for deep production, such as has proved prolific at Spindle Top, Humble, Barbers Hill, and Sour Lake, and is doing the test drilling methodically and thoroughly. Early tests were closer to the dome, but each succeeding test was located a little farther out. Aside from the seven tests now completed on the Houssiere-Latrielle lease, Yount-Lee Oil Company has finished four tests on the Crowley Oil & Mineral Company lands, making a total of 11 of the deep tests finished. The company is operating three rigs in the field It is drilling now at 6675 feet in shale in Y. L. Simms Fee 1, located 1073 feet north and 1146 feet west of the southeast corner of Section 45-9s-2w. Crowley Oil & Mineral Company 5, located 4245 feet east and 410 feet north of the southwest corner of Section 48-9s-2w, is drilling around 2000 feet. Houssiere-Latrielle 8 is a location 5678 feet east and 712 feet north of the southwest corner of Section 47-9s-2w.

The deepest of the wells drilled by Yount-Lee Oil Company at Evangeline was Crowley Oil & Mineral Company 4, in Section 48, which tested salt water at 7475 feet and was abandoned early in November, 1929, in shale at 8145 feet. It still holds the record of being the deepest test ever drilled in Louisiana, and lacks only five feet of being as deep as the deepest test ever drilled on the Gulf Coast, Yount-Lee Oil Company's Chambers County Agricultural Association 4, at Barbers Hill, Chambers County, Texas, abandoned in heaving shale at 8150 feet in October, 1929.

Evangeline is among the oldest fields of the Gulf Coast, having been discovered in 1901. Nearly 900 wells have been drilled there, and the field has produced over 40 million barrels of oil.

The Texas Company's deep test at Evangeline, Rayne Heirs 5, located in Section 40-9s-2w, is drilling sand rock at 5806 feet.

Humble Gets First Commercial Well on Moss Bluff Dome

HOUSTON.—Humble Oil & Refining Company during the past week completed Sterling 6 as the discovery well of Moss Bluff Dome, Liberty County, obtaining the first commercial production following periodic drilling there by various companies since discovery of the dome by seismograph in 1926, over three years ago. Credit for the geophysical discovery goes to Gulf Production Company.

Total depth of Humble Oil & Refining Company's producer is 5666 feet. Eight joints of 4¾-inch screen were set in the sand, and the well came in flowing 800 barrels of 32 gravity pipe line oil daily.

This well is on the east side of the dome, on a 1041-acre tract owned by R. S. Sterling and located in the James McFadden Survey. It is the sixth well drilled on the tract by Humble Oil & Refining Company, each of which is located a little farther away from the dome than the previous test. The first four wells were 150 feet apart and the other two are spaced out at intervals of 300 feet. Salt was encountered in the first five tests at depths of 2240 feet, 2008 feet, 3329 feet, 3619 feet and 4692 feet, respectively.

Aside from Humble Oil & Refining Company, several other companies have leases not far from the new producing well. Gulf Production Company has 947 acres on the D. J. McFadden Survey adjoining the discovery tract on the north. Humble Oil & Refining Company has lease on a total of 1553 acres of land of R. S. Sterling around the discovery well. Gulf Production Company has 150 acres on the J. C. Ketterman land 1000 feet southeast of the producing well. Continental Oil Company has a long strip 1000 feet north of the well. Shell Petroleum Corporation has 1600 acres at a minimum distance of 2200 feet to the southwest of the producer.

Among the tests that have been drilled in the past at Moss Bluff is Pure Oil Company's Liberty Investment Company 1, located on the north end of the dome in the T. D. Yocum Survey. It was abandoned about the middle of October, 1929, in shale at 5776 feet.

On top of the dome Union Sulphur Company drilled several tests, trying for commercial sulphur, encountering top of the cap rock as high as 700 feet below the surface. Those wells were located on Kyle land in the James McFadden Survey. A little farther out, Sun Oil Company, also drilling on Kyle leases, went as much as 3000 feet deep.

On the south side of the dome Tampico Oil Company's Sherman 1, located in M. D. Labadie Survey, was dry at 1800 feet. Turtle Bayou Oil Company's Middleton 1, in the T. D. Yocum Survey, on the northeast side of the dome, was abandoned at 3320 feet. The same company's S. B. Fuson 1, located south of Middleton 1, in B. M. Spinks Survey, was abandoned at 2214 feet.

At present Humble Oil & Refining Company is the only company operating at Moss Bluff.

Darst Drilling Active With No Added Line Outlet

SEGUIN, Texas.—Since proration of Darst Creek production went into effect January 1 under supervision of Umpire H. H. Fitzpatrick, there has been no change in pipe line facilities of the area, and in order to allow various new wells completed after the first of the year to participate in proration of market outlet during the latter half of January, a revised schedule of allowable production on the various 20-acre proration units will go into effect as of January 16. Gauges of new wells are being taken as they come in, and after a well is brought into production under the proration plan, it will not be gauged except at the close of each month.

One of the latest completions at Darst Creek was Gulf Production Company's T. Dix 1, located in north portion of field in J. B. Robinson Survey. It came in as a 700-barrel well at 2565 feet, with surface elevation of 501 feet. Top of the Edwards lime, the producing formation, is at 2548 feet.

Humble Oil & Refining Company's Sallie Wilson 2 in the south part of the field came in flowing 200 barrels per hour at 2657 feet.

Failure of Luther Turman, Fort Worth operator, to include his two producing leases in the Darst field plan of proration has resulted in special production allowances being awarded to owners of offset producers as is the case in West Texas prorated fields when operators fail to adhere to the production restrictions. Turman is producing his wells at maximum capacity and delivering the oil on contract at less than the posted price to Grayburg Oil Company via a small line. This excessive drainage by Turman is counteracted by the direct offset well owners being permitted to produce at capacity, and the excess output over proration allowance is being stored by the pipe line companies for the producers. The flush production in the two areas not adhering to proration restrictions will be exhausted shortly under this procedure.

Six tests are scheduled to be drilled near the Magnolia Petroleum Company's R. C. Appling 1, which is a freak producer although the largest in the field. This well flowed 5425 barrels daily, based on two-hour proration test late in December, and gauged 2652 barrels on the first day of proration enforcement. The oil flow from the Appling well is coming from Austin chalk horizon with a total depth of 2532 feet, and because of the abnormal flow for this particular formation it is conceded to be in a crevice. Magnolia Petroleum Company is to set up rotaries to drill four nearby tests immediately on the L. V. Eckols and the S. Roamel leases, and has made a total of five locations on the two tracts. The Texas Company and Cranfill-Reynolds Company have authorized the drilling of one each on their nearby leases. The north end of the Darst field is to terminate on the Appling land, according to the dope of a number of operators.

Magnolia Petroleum Company leads on field work as well as topping the list of producing companies at Darst. In addition to the above mentioned five tests, this company's Thomas Dix 3 is nearing the casing point after logging the top of Austin chalk at 2145 feet; Dix 4 is a location, and Dix 5 is drilling below 500 feet; C. Zedler 1 is an idle derrick, and Zedler 2, which is east of the trend of production, is drilling below 1450 feet; M. Richburg is drilling below 1400 feet, and the spudding of H. G. Goldman 1 is about due. Efforts of the Magnolia Petroleum Company to extend the field to the northeast with its A. M. Baker 1 proved a failure, and the test has been plugged with a hole full of sulphur water in Edwards lime at 3020-52 feet, with top of Austin chalk at 2610 feet.

Simms Oil Company et al's wildcat oil producer on the Manford farm, located northeast of the Darst field and apparently separated by dry holes, started off the new year with a total crude recovery of about 100,000 barrels. This well is now averaging 560 barrels of 36° gravity oil daily, having flowed through small chokes and with back pressure since its completion August 28, 1929, from crevice

Refugio Oil Production Increasing Steadily

HOUSTON.—Total oil production of the Refugio field, Refugio County, amounted to 1,992,954 barrels during 1929, making the grand total of Refugio production 2,054,239 barrels since discovery of oil there in the summer of 1928. In December, 1929, the total production of the field was 502,734 barrels from 80 wells.

Oil production of Refugio during 1930 is conservatively predicted to reach a total of 3,000,000 barrels. During the past several months around 25 rigs have been running steadily in the field, and continuation of about the same amount of activity may be expected inasmuch as the field is divided into many small tracts leased by numerous operators, aside from the large holdings of the United Gas Company subsidiaries and Houston Oil Company.

Additional market outlet for Refugio oil production is being provided through looping of Gulf Coast Pipe Line Company's line to deep water ship loading terminal in Arkansas Bay, 25 miles from the field. The old line will handle recently discovered high gravity crude coming from a sand around 5500 feet, and the new line will take care of the heavier grade of oil found around 3700 feet.

There is at present only one well completed in the 5500-foot sand, Union Producing Company's (formerly Mission Drilling Company's) O'Brien 1, which is producing around 480 barrels of 28 gravity crude daily. Union Producing Company's Mitchell 2 came in recently, however, as a large gas well with some oil production at 5448-61 feet. It showed 1900 pounds pressure.

There are two wells, both being drilled by Union Producing Company, which have set casing over the "O'Brien" sand. Powers 2 has the sand at 5491-95 feet, and on January 7 was preparing to drill the plug. O'Brien 2 has casing set and cemented at 5516 feet. These deep tests and the deep producers are on the east flank of the field.

Independent Oil & Gas Company's O'Brien 1, deepest test ever drilled at Refugio, is also in the deep sand, and according to reports in Houston early this week difficulty was being experienced in getting to bottom with liner and screen. Total depth of the hole is around 6400 feet.

During the past week there were two well completions at Refugio. Saxet Oil Company's Holmes Heard 3, located in the north end of the field, came in from 3698-3720 feet with 1000 pounds gas pressure, and producing 50 barrels of oil and 10 barrels water daily. Independent Oil & Gas Company's J. F. B. Heard B-1 on the southeast flank came in flowing 550 barrels of pipe line oil daily through a three-quarter-inch choke, with 190 pounds pressure, at 3653-66 feet.

at 2418 feet. It is not included in the Darst field proration plan, and the oil is being marketed in tank cars. The Simms Oil Company increased its interest in the Manford well and lease recently by acquiring Penn Oil Company's 30 per cent interest for $20,000 cash. H. C. Cate, Dallas operator, owns the remaining 10 per cent interest.

The Texas Company's Roamel 1, located in Jerome B. Alexander Survey, in extreme north portion of Darst Creek field proper, and a direct north offset to L. C. Turman's R. Miller 1, is drilling Del Rio clay at 2463 feet; and Roamel 2 is drilling Buda lime at 2410 feet. The Texas Company's Dallas Wilson 4 in the south part of the field has set casing at 2601 feet and is waiting on cement to harden. The same company's Henry Willie 1 is in Edwards lime at 2585 feet.

Gulf Production Company's C. Anderson 1 is drilling Buda lime at 2420 feet; Tadlock 1 is drilling Georgetown lime at 2600 feet; and Dix & McKean 1 is in hard shale at 1980 feet.

Humble Oil & Refining Company's Sallie Wilson 3 is drilling lime at 2655 feet; Yates Wilson 2 is bailing and swabbing at 2650 feet and will be put on the beam; and A. E. Dowdy A-1, Denman A-3, Denman A-4 and Denman A-5 are rigging up.

Sun Oil Company's Knoblock 1 is sidetracking bit at 2130 feet. Penn Oil Company's Rand Miller 1 was swabbing at 2628 feet the latter part of the past week. Other operations at that time at Darst Creek were as follows:

O. W. Killam's R. C. Appling 1 was in Taylor marl at 2620 feet.

L. C. Turman's R. Miller 2 was also in Taylor at 2090 feet.

United North & South Development Company's McKean-Dix 1 was drilling below 2000 feet; Dix 2 was rigging up; and Roamel 1 was setting casing to test oil show in Taylor marl at 2080 feet.

Stroube & Stroube's R. Miller 1 was drilling at 500 feet, and Miller 2 was a location.

Shell Petroleum Corporation's L. G. Denman 1, located south of Darst Creek field in J. de La Baume Survey, was in Del Rio at 3507 feet, with top of the chalk at 3190 feet, and bottom of the chalk at 3390 feet.

Adams & Lyles' Zaboroski 1, located in J. D. Clements Survey, Block 14, six miles southwest of Darst Creek production, was dry at 2722 feet and has been abandoned. It flowed 2000 barrels of sulphur water from the Edwards lime at 2660 feet.

Grayburg Oil Company's Wells 1, located about 10 miles south of Darst Creek production, is rigging up heavy engine to deepen from 3901 feet. Top of the Edwards lime in this well is at 3895 feet. Casing was set and when the plug was drilled the well showed sulphur water.

Pagenkoff & Kennon's O. J. Halm 1 is in Edwards lime at 2029 feet. Bottom of the chalk in that well is at 1737 feet.

Unitization Conference at Tulsa Jan. 22; Committee Named

TULSA.—W. N. Davis, Phillips Petroleum Company, Bartlesville, and president of the Mid-Continent Oil & Gas Association, has set January 22, 1930, as a meeting of the general unitization committee.

Unitization as a means of furthering conservation of petroleum was first endorsed and ratified by the Mid-Continent Oil & Gas Association on November 26. Ten days later is was endorsed by the American Petroleum Institute.

Mr. Davis has appointed the following men to serve on the general unitization committee, all of whom have been asked to be present at the meeting in Tulsa:

C. C. Herndon, vice president Skelly Oil Company, Tulsa; D. H. Kelsey, vice president and general manager Prairie Oil & Gas Company, Independence, Kansas; James A. Veasey, general counsel Carter Oil Company, Tulsa; R. F. MacArthur, vice president Barnsdall Oil Company, Tulsa; P. N. Wiggins, Jr., vice president Peerless Oil & Gas Company, Tulsa; Paul S. Ache, president Reiter Foster Oil Corporation, Tulsa; George D. Foster, superintendent land department, Devonian Oil Company, Tulsa; Comar Plummer, vice president Pure Oil Company, Tulsa; H. R. Straight, vice president and general manager Empire Companies, Bartlesville; Ben H. Stephens, vice president Magnolia Petroleum Company, Dallas; J. Edgar Pew, vice president Sun Oil Company, Dallas; E. T. Moore, president Sims Oil Company, Dallas; D. J. Moran, president Continental Oil Company, Ponca City; John R. Suman, vice president Humble Oil & Refining Company, Houston; E. R. Filley, division manager, The Texas Company, Tulsa T. J. Donaghue, James A. Green, department manager Shell Petroleum Corporation, Tulsa; Burdette Blue, vice president and general manager Indian Territory Illuminating Oil Company, Bartlesville J. S. Bridwell; J. R. Penn, Fort Worth; T. B. Hoffer, Fort Worth; J. F. Lucas, Dallas; Frank Cullinan, Houston; W. B. Hamilton, Wichita Falls; and E. H. Blum, vice president Atlantic Oil Producing Company, Dallas.

Gulf to Drill Three Tests On Mississippi Block

Jackson, Mississippi.—Home Oil Company, which drilled and junked Rainey 1, Section 13-5n-1e, Rankin County, Mississippi, just across Pearl River from Jackson, has turned over to the Gulf Refining Company its block of 5000 acres to which the latter company has added 7000 acres; and three tests, 90 days apart, will be drilled immediately, according to authentic reports. The Rainey derrick will be skidded over and used to drill a new hole.

Home Oil Company reserves a 25 per cent overriding royalty on net profits and also has a drilling agreement with the Gulf Refining Company. The Rainey test showed much gas in the Selma chalk at 2512 feet.

Several miles to the north of the Rainey test Cleve Love and associates are shut down at 1694 feet in Mayes 1, Section 2-5-1e, Hinds County, after drilling in a boulder in the Wilcox formation.

Amerada Petroleum Corporation is rigged up and ready to spud in Campbell 1, Section 24-12n-2w, Yazoo County, Mississippi. J. C. Tippett of Shreveport has the drilling contract.

Lauderdale Oil & Gas Company probably will drill plug about January 15 in Lackey 1, Section 2-7-16e, Lauderdale County, Mississippi, near Meridian. Total depth is 2816.5 feet with 8¼-inch casing set at 2795 feet.

Henderson and associates have started up again in Dornbusch 1, Section 8-18-5e, Warren County, Mississippi, Vicksburg district, and are now down to 2475 feet in stiff gumbo streaked with hard packed sand.

Amory Petroleum Company is drilling new hole at 2335 feet in Hall 1, Section 8-13-17, Monroe County, Mississippi, Amory district, to test a gas show at 2387 feet. Total depth of old hole is 3045 feet. Amory Development Company drilled out of fine lime into grey coarse sand at 2909 feet in Bourland 1, Section 2-13-19, of the same county.

J. D. Collette and the Carter Oil Company are drilling in black shale with layers of coarse sand at 2212 in Blackmer 1, Section 14-11-4w, Yalabousha County, Mississippi.

Port Barre

Houston.—Gulf Refining Company of Louisiana has completed W. H. Hoskins A-1 at Port Barre, St. Landry Parish, Louisiana, Section 4-6s-5e, as a 200-barrel well at 3415 feet. That company is moving in material for Ovide Lahaye 1, also in that section. The Texas Company's Botany Bay Lumber Company 3 at Port Barre dome is drilling hard sand at 3000 feet.

Harris County

Houston.—Buffalo Oil Company's wildcat test, Beall 1, located in the John Flowers Survey, three miles northwest of Eureka, Harris County, is drilling around 1250 feet. Indications of a salt dome were found there in the summer of 1929 by torsion balance, and the present test is the first to be drilled there.

Storage Capacities for Petroleum and Petroleum Products on Pacific Coast

September 1, 1929

By E. T. KNUDSEN

THIS survey of storage capacities includes all storage equipment of oil companies operating on the Pacific Coast, i. e., field storage, refinery storage and storage at distributing points. Storage of consumers, such as railroads, is not included. Information was requested as to the crude petroleum storage capacity and the refined products storage capacity but the data did not furnish the segregation completely. The following figures, therefore, combine all products but are segregated according to location and type of storage.

The storage capacities as of September 1, 1929, amounted to 238,500,000 barrels, of which 5,036,000 barrels was under construction, in California; 1,972,000 barrels in Oregon and 3,356,000 barrels in Washington; a grand total of 243,828,000 barrels. The last census of storage capacities, taken by the United States Bureau of Mines as of May 1, 1926, showed a total of 195,825,000 barrels in California and 70,000 barrels in Washington. Although these earlier figures do not include producers' storage at the wells, it is not likely that this class of storage is of such size that the omission would depreciate the comparative value of the two sets of figures.

Stocks of petroleum and petroleum products in Pacific Coast territory as of September 1, 1929, amounted to 173,768,000 barrels, of which approximately 173,000,000 barrels was stored in the tankage listed herein, the balance representing coke and such products as are not stored in tanks. Allowing 10 per cent, or approximately 17,000,000 barrels, for working space, the indicated empty storage on the Pacific Coast was 48,792,000 barrels and an additional 5,036,000 barrels was under construction. Investigation disclosed, however, that much of this empty storage is not readily available for use, being obsolete and in a state of disrepair, this being especially true of the nearly 20,000,000 barrels of earthen storage in the San Joaquin valley.

A very definite trend toward steel storage is indicated by the increase of this type in California from 94,602,000 barrels in May, 1926, to 130,449,000 barrels in September, 1929. The storage under construction in California and the storage in Oregon and Washington is also all steel. Concrete storage increased from 71,412,000 barrels in May, 1926, to 82,986,000 barrels in September, 1929, while earthen storage dropped from 29,802,000 barrels to 19,850,000 barrels.

Of the 233,464,000 barrels of storage in California, 135,787,000 barrels is in the Los Angeles section, which has in addition 4,594,000 barrels under conconstruction. The San Joaquin valley has 64,228,000 barrels, of which 19,830,000 barrels is earthen storage. It seems probable that a large proportion of the empty storage is in this section. The San Francisco Bay District, including all territory in California north of San Francisco, has 29,628,000 barrels of storage, of which 25,863,000 barrels is steel storage. The 442,000 barrels of steel storage shown as under construction in the San Francisco Bay district is not strictly new storage but is simply being moved from one place t o another and being reconstructed. The Coast region, including all of Ventura and Santa Barbara Counties, has 3,821,000 barrels, of which 170,000 barrels is wooden and is not in use at the present time.

The accompanying tabulation shows the location and types of storage.

Maricopa Flats

Taft, Calif.—Rio Grande Oil Company placed Havenstrite 3 on production but after flowing at a 2400-barrel rate for a short time this Maricopa Flats well sanded up and has not produced for several days. It is believed that the well will make a good producer when cleaned out.

Mt. Poso

Bakersfield, Calif.—The Texas Company has made a location on the southwest quarter of Section 4-27-28, in the extreme north edge of the Mt. Poso field. Production at this point would not extend the field beyond the indicated outside line, but may pave the way for additional drilling.

Potrero

Los Angeles.—After flowing at a lively rate for a short time, Pacific Southwest Development Company's Burgman 1, located in the townlot district of the Potrero field, died and has since refused to make another flow. The well was drilled to 4753 feet and was tested from about 75 feet of sand below the 6⅝-inch shutoff at 4675 feet. This is a new producing level for the townlot sector, however, and other drilling wells probably will be carried to this sand.

Storage Capacities for Petroleum and Petroleum Products on the Pacific Coast, September 1, 1929

(Barrels)

Location—	Steel	Concrete	Earthen	Wooden	Total
CALIFORNIA					
Los Angeles[2]	[1]76,130,000	59,644,000	4,000	9,000	[1]135,787,000
Coast Region[3]	3,629,000	6,000	16,000	170,000	3,821,000
San Joaquin Valley[4]	24,827,000	19,571,000	19,830,000	.....	64,228,000
San Francisco Bay District[5]	[1]25,862,000	3,765,000	.....	.....	[1]29,628,000
Total	[1]130,449,000	82,986,000	19,850,000	179,000	[1]233,464,000
OREGON	1,972,000	.....	.....	.....	1,972,000
WASHINGTON	3,356,000	.....	.....	.....	3,356,000
PACIFIC COAST TOTAL	135,777,000	82,986,000	19,850,000	179,000	238,792,000

[1]Steel storage under construction, Los Angeles—4,594,0000 barrels, San Francisco—442,000 barrels, not included.

[2]Includes San Diego region. [3]Includes all of Ventura and Santa Barbara Counties. [4]Includes San Luis Obispo. [5]Includes all territory north of San Francisco in California.

INTERNATIONAL *turns to* *A merican Roller Bearings* *in building their newest crown and traveling blocks*

AS a distinct forward step in their manufacturing progress "Ideco" has announced the adoption of American Bearings for their newest crown block. This company thus becomes another member of the "All-American" team of drilling equipment manufacturers because their Boykin Division has been Americanized for some time.

The list of "All-Americans" below is the "Who's Who" of equipment makes in this industry. Their judgment recommends these Bearings for all heavy duty. And the Bearings recommend the products to the buyers and users.

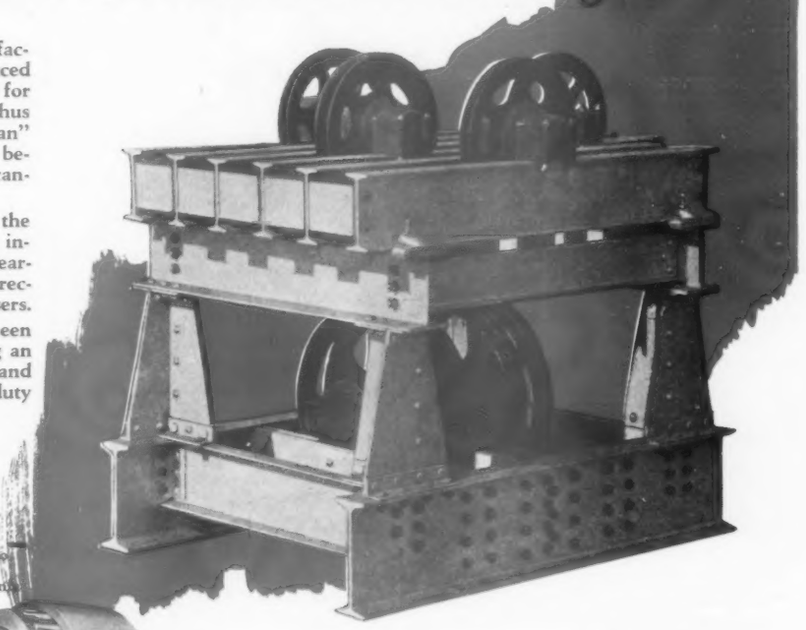
The better results from Americans have been well broadcasted. Station A.R.B. is receiving an ever-increasing number of fine comments and fine orders for "The standardized heavy duty roller bearing of the Oil Country."

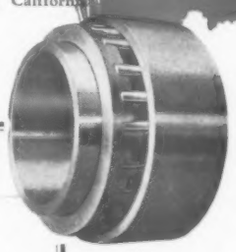
AMERICAN ROLLER BEARING CO.
PITTSBURGH, PA.

Pacific Coast Representatives

Frank M. Cobbledick Co.
1031 Polk St.
San Francisco, California

Edward D. Maltby Co.
321 W. Pico St.
Los Angeles, California





OTHER USERS OF

AMERICAN ROLLER BEARINGS — HEAVY DUTY

AMERICAN WELL & PROSPECTING CO.
BOYKIN DIVISION, INT. DERRICK & EQUIPMENT CO.
DOHENY STONE DRILL COMPANY
FRANKLIN VALVELESS ENGINE CO.
HOPPER MACHINE WORKS
INTERNATIONAL DERRICK & EQUIPMENT CO.
LATEX IRON & STEEL WORKS, INC.
LEE C. MOORE CO.
LUCEY MANUFACTURING CORP.
NATIONAL SUPPLY COMPANY
OIL WELL SUPPLY CO.
STAR DRILLING MACHINE CO.
PORTABLE RIG CO.
T. T. WORD SUPPLY CO.

AMERICAN HEAVY DUTY ROLLER BEARINGS

News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

West Coast Enters New Year In Better Shape

LOS ANGELES. — The New Year found California in a slightly improved condition, despite a growing potential at Santa Fe Springs and bulging stocks of light and heavy oil and gasoline. Curtailment has brought production in line with consumption and if the present conservation program is successfully carried out the industry will be able to pull itself together and start an upward march which should place it on a sound basis. After floundering around during the latter part of the year, attempting to stay with the conservation plan outlined and placed in force at Santa Fe Springs, November 1, nearly all opposition to the present program has been eliminated and smoother sailing is anticipated.

Since production has been reduced by more than 100,000 barrels, the task of reducing stocks to a more sensible level is being considered. Although total stocks showed a slight decline during November, the sharp increase during the remainder of 1929 swept the total to more than 184,000,000 barrels. Storage is very scarce and operators are more concerned in keeping empty tanks empty than in filling them. The cost of carrying the oil for an almost indefinite period is considered greater than the expense of maintaining empty tanks. Production must be cut to a point considerably below the 700,000-barrel mark before stocks will be reduced at anywhere near the rate which marked their climb during the past year.

Gas Waste Ignored

Gas conservation has been completely sidetracked, although the state is still fighting to enforce the law at Santa Fe Springs. If the gas conservation law starts functioning during the early part of 1930, production will be reduced in both the Santa Fe Springs and Long Beach fields. Voluntary action has been more effective than state action in this respect, although it must be admitted that the wide-open break in crude prices influenced operators in their action more than the fear that the state would succeed with its injunction proceedings.

In issuing the semi-monthly report for Santa Fe Springs, covering the latter part of December, Umpire H. P. Grimm has outlined reasons for a slight change in the method of arriving at the allowable production of several smaller companies that have not been instrumental in increasing the potential during the past few months. He has explained that as new wells have been brought in or made ready for production, it has been increasingly evident that operators with small properties, or production, were at a serious disadvantage. Their production, under a rigid application of the percentage of curtailment, was threatened with decrease to a point of inequity, it was pointed out. When this was called to the attention of the larger producers and those bringing in most of the new wells, they recognized the condition above outlined and consented to assume the greater portion of the curtailment, Grimm stated.

Proration Equalized

The new schedule for the first part of January took into consideration the possibility of inequities and set the allowable of the small operators who are in no way responsible for the increased potential at a figure which will give them ample protection, even in the face of a much higher potential. The larger companies had previously agreed to shoulder the greater part of the burden and accepted a larger percentage of reduction from potentials without argument. The rapidly increasing potential, caused by completions in the Clarke or Hathaway zone, had begun to nettle a few of the smaller operators and as their allowable production became smaller during each period, they appealed for a change in the method of computing allowable runs from their leases. The new arrangement was inaugurated under authority of a sub-section of the original agreement which made it possible to correct obvious inequities.

Santa Fe Springs produced 5,119,850 barrels during December, for a daily average 165,157 barrels. Due to penalties previously imposed, the allowable was only 4,073,999 barrels. This gives an excess of 1,045,851 barrels to be carried over into the present period. The major operators religiously held production around their allowable totals, but one small group paid little attention to their quotas. New wells caused much trouble and accounted for a large part of the excess. The daily average excess of the Wilshire Oil Company group, which included Ambassador Petroleum Company, Bandini Petroleum Company, Commodore Petroleum Company, Wilshire Annex Oil Company and Wilshire Oil Company, was 20,184 barrels during December, or nearly 60 per cent of the total excess for the month. The daily average excesses of several other operators were: George F. Getty, Inc., 4003 barrels; The Texas Company, 1735 barrels; Superior Oil Company, 1573 barrels; H. A. Bardeen, 1564 barrels, and General Petroleum Corporation, 1271 barrels. Several operators had an average daily shortage for the month.

A total of 15 wells were completed during the December 16-31 period. The total potential of the new wells, established January 7, or in the middle of the present period, was 49,435 barrels for an average of 3295 barrels. Actual potential at the time of completion was considerably higher.

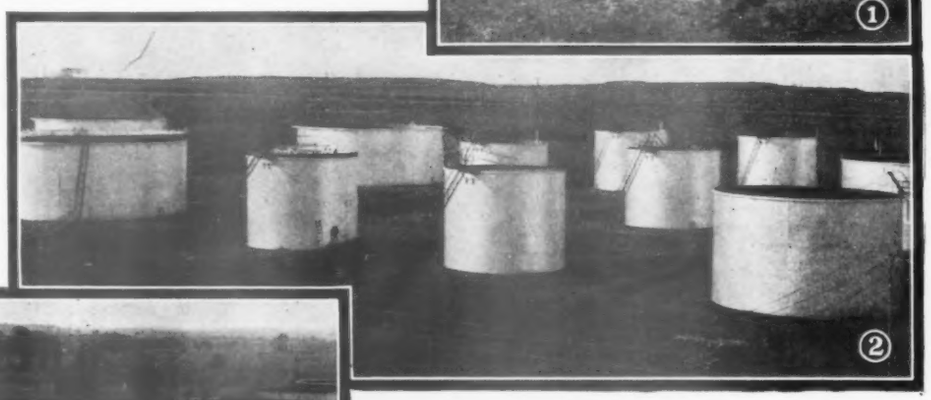
Field potential for the January 1-15 period has been set at 331,261 barrels. The allowable production has been set at 136,865 barrels, due to an average daily excess of 13,135 during the December 16-31 period.

Elwood

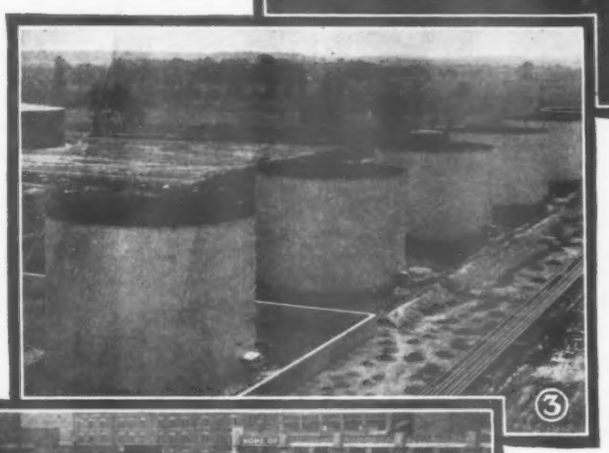
The umpire's report covering operations during December in the Elwood field is one of the brightest spots in the entire conservation plan and reveals the possibilities of curtailment when all operators cooperate. Total production for the month was 975,085 barrels, or a daily average of 31,454 barrels. This was a daily excess of 1454 barrels, but the completion of several large wells during the first part of the month accounted for the overproduction. Average production during the latter part of the month was brought to 24,000 barrels to offset the excess caused by new wells. Field potential has been fixed at 52,350 barrels, with an allowable production during January of 28,546 barrels. The alloted production is 30,000 barrels, but the excess during December has reduced the total. Potential production of the Barnsdall Oil Company has been fixed at 34,240 barrels, while the allowable during the period will be 19,135 barrels. The potential and allowable production of other companies follow: Bankline Oil Company, 2680 barrels and 1517 barrels; Elwood Exploration Company, 2840 barrels and 1533 barrels; Pacific Western Oil Company, 7220 barrels and 3930 barrels; Seward Oil Company, 2370 barrels and 956 barrels, and C. C. Spalding, 3000 barrels and 1475 barrels. The field will be curtailed 43.69 per cent of the potential production.

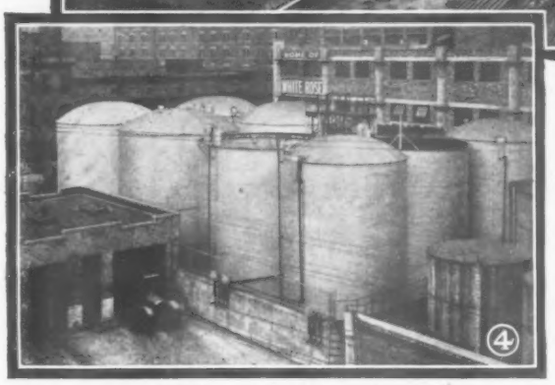
Curtailment at Ventura Avenue has been based on gas waste and not on oil production, the umpire's report for December showing a total gas waste of 565,

Field Erected *Horton Tanks* 500 Barrels and Up



(1) Group of 10,000 bbl. tanks. (2) Group of tanks ranging from 500 to 30,000 bbl. capacities . . . all are equipped with Wiggins Floating Roofs.





(3) Row of 11,700 bbl. tanks with Wiggins Floating Roofs. (4) Nine 1,325 and 2,500 bbl. tanks, three of which have Wiggins Floating Roofs and the balance have umbrella roofs.

TYPICAL Horton tank installations are shown in these views. In addition to large capacity storage tanks we built the smaller sizes of field erected tanks, ranging from 500 barrels up.

Horton tanks are built either to our standard design, A.P.I. specifications or special designs to meet customers' needs. They are equipped with ordinary steel roofs or with Wiggins Roofs for the prevention of evaporation and fire. Wiggins Roofs are also installed on any existing tank in good condition.

Whether you are considering a group of tanks or a single installation, large or small, our nearest office will appreciate the opportunity of submitting prices for your consideration.

CHICAGO BRIDGE & IRON WORKS

Dallas	3339 Magnolia Bldg.
New York	3145 Hudson Terminal Bldg.
Cleveland	2206 Union Trust Bldg.
Chicago	2142 Old Colony Bldg.
Detroit	1513 Lafayette Bldg.
Philadelphia	1614 Jefferson Bldg.
San Francisco	1060 Rialto Bldg.
Boston	Consolidated Gas Bldg.
Havana, Cuba	Apartado 2507

WIGGINS ROOFS
Stop EVAPORATION LOSSES

AN OIL WELL POWER PLANT

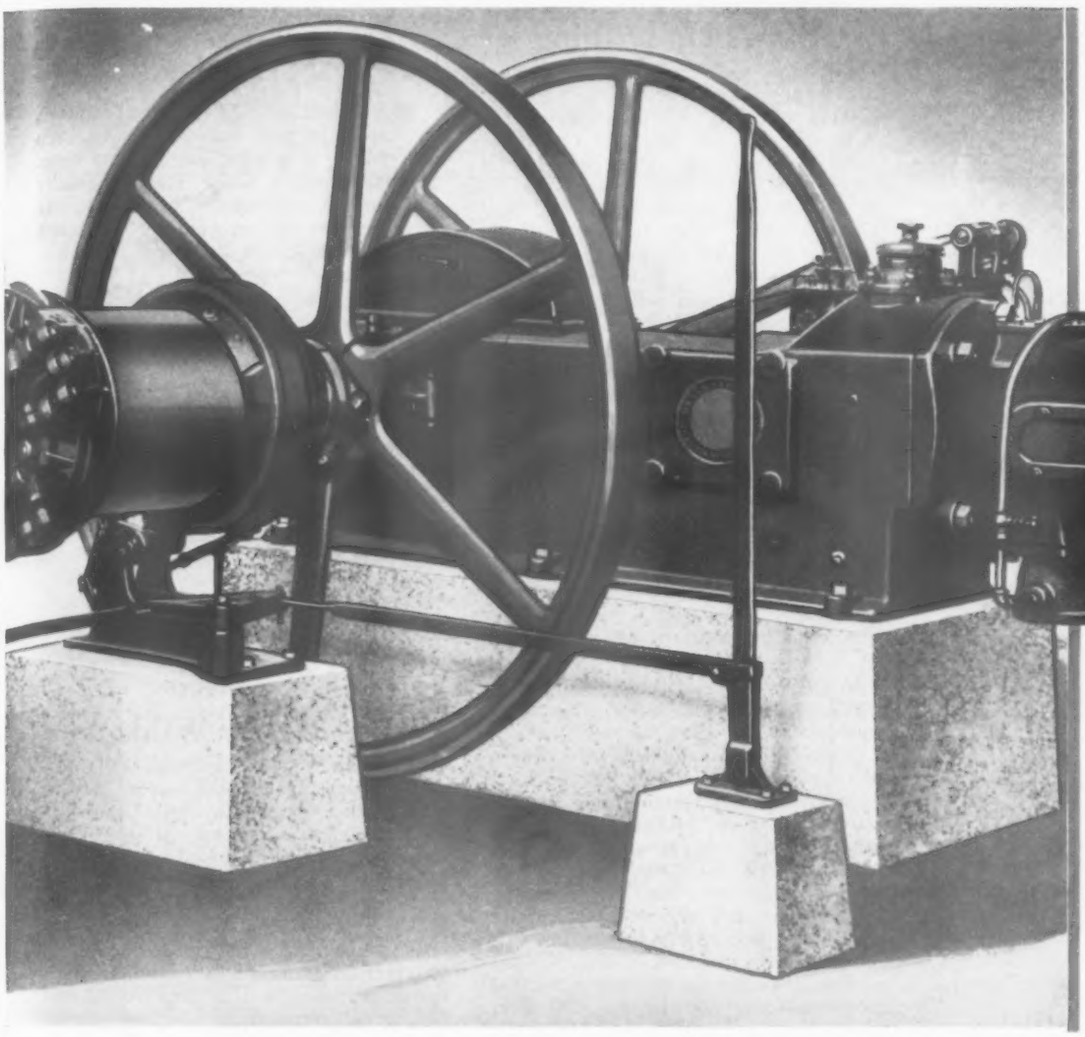
WHICH SCORES HIGH ON RESULTS!

TYPE O. F.

FROM independent operators with a few wells to the large companies with thousands of wells you will find the Cooper-Bessemer Type O. F. engine standard for pumping and drilling. More than three decades of country-wide application to the needs of producers decide the design and construction of this 2-cycle gas driven unit.

Besides being easy to transport, easier and less costly to operate, Type O. F. is adaptable for pumping, drilling, agitating and cleaning out, pulling rods and tubing, and other belt-drive work. Sizes are 25, 30, 35, 40, 50 B. H. P.

COOPER-



YOU'RE ALWAYS SAFE IN CHOOSING A COOPER-BESSEMER

SIX REASONS WHY IT IS CHOSEN

1. Enclosed bed plate keeps out all dust, dirt and grit.
2. Easily accessible, adjustable air valve on top of bed plate makes starting easy.
3. Adjustable and removable main bearings (Timken optional) — oversize to permit longer life.
4. Large, quick-opening side plates give easy access to adjustable crosshead.
5. Outside bolting of cylinder makes its removal easy and simple.
6. Quickly accessible water jacket, easy to clean and keep clean.

THE COOPER-BESSEMER CORPORATION

Formerly The C. & G. Cooper Company and The Bessemer Gas Engine Company

Mount Vernon, Ohio — Grove City, Pa.

Branches in all principal oil and gas fields

BESSEMER

814,000 cubic feet, or a daily average waste of 18,252,000. The daily allowable gas production during December was 150 million cubic feet, but under the new January schedule a gas production of 160 million cubic feet will be allowed, and, in addition, oil will also be used as a basis for arriving at the gas waste. The new arrangement slightly revises the gas-oil ratios of the various leases and is compiled on a combination gas and oil production. Field oil potential has been fixed at 61,671 barrels for January, with the gas potential placed at 281,972,000 cubic feet daily. It will be necessary to cut gas production 43.26 per cent during January to meet the 160 million cubic foot allowance. Although Associated Oil Company is the largest oil producer in the field, Shell Oil Company has been suffering most from the plan used during December. The original schedule for January called for a curtailment of 53,089,000 cubic feet on Shell Oil Company's leases, as compared with a cut of 43,227,000 cubic feet on Associated Oil Company's leases, but a later revision changed these totals somewhat. This apparent discrepancy was caused by the fact that Associated Oil Company operates one large lease with a very low gas-oil ratio. This fortunate circumstance for the company made it possible to produce a much larger percentage of the potential than other operators having leases with a high gas-oil ratio. A dispute over this difference, however, was largely responsible for the change to a combination gas and oil basis of computing gas waste. Oil production under the new arrangement will be reduced to about 48,000 barrels.

Venice Producer Settles To 2000-Barrel Flow

Los Angeles.—After flowing without a hitch for more than two weeks, Ohio Oil Company's discovery well in the new Venice field has convinced all of the skeptics that it is no freak producer. Production settled to about 2000 barrels with the original flow arrangement, but installation of a one-quarter-inch bean cut the yield to about 1400 barrels. The smaller opening is being used partially as a precaution but largely to reduce the flow because the oil is not needed. Even the company expected the well to make a high percentage of water after it produced for a time, but its failure to do so has made the producer all the more remarkable. A water witch was being run when the well blew in, so it was only natural that water was to be expected. Apparently the water has been shut off perfectly with the 6¼-inch at 5947 feet. The oil has increased its gravity to 24.8 and gas production has jumped to above a million cubic feet. The gasoline content of the gas is about four gallons per thousand feet, or unusually rich for such a low gravity oil. The well was drilled to 6200 feet and is flowing from about 250 feet of open hole. Located in the center of a large mud flat which had been condemned for years by many geologists, the well was one of the real sensations of 1929.

Kettleman Agreement Slows Up Drilling

Coalinga, California.—Much care is being exercised in the drilling and completion of wells in Kettleman Hills field—the natural result of the agreement to shut in wells until July 1, 1931. Operators are coring cautiously ahead in the 20 odd active wells, and with plenty of time to do the job well, the usual rush which attends the development of new fields is absent. Before the agreement was signed, top speed was made on the North Dome and a dozen wells passed the 5000-foot mark in record time. The slower program will be reflected during the latter part of 1931 and subsequent years by a more satisfactory production than would have been obtained had no agreement been reached.

Bolsa Chica Oil Corporation has succeeded in cementing a string of nine-inch casing at 7275 feet in Ferguson 1, a North Dome test which is expected to show the significance of the sharp dip on the west flank. The well was drilled to 7450 feet, and following a difference of opinion as to whether the Temblor sand had been reached, a string of casing was run for an actual test.

Ohio Oil Company has lost circulation in Smith 1 at 7976 feet and this important South Dome test has again assumed a very doubtful appearance. Regarded as a representative test of this part of the field, the well has been a disappointment. On a production test at 7000 feet, a flow of salt water was developed. After running to gray sand for several hundred feet, the formation changed to shale around 7700 feet and some hope was again entertained that an oil sand might be found. The shale body proved rather thin and gray sand was again cut below 7800 feet.

Standard Oil Company has completed No. 8-1-P with an initial production of 3000 barrels of 60 gravity oil and about 90 million cubic feet of gas. The well was drilled to 7108 feet. This is one of the wells allowed to flow under provisions of the conservation agreement.

To Test 600 Feet Sand In 9350-Foot Well

Los Angeles.—The impending production test in Oscar Howard's Hathaway 7, world's record well at Santa Fe Springs, is holding the center of interest in the Los Angeles basin and the outcome will undoubtedly go a long way toward determining the importance of the 8700-9400-foot zone in this critical field. Hathaway 7 was drilled to 9350 feet and a string of 4¾-inch casing is being run to 8730 feet for a test of more than 600 feet of oil sand and shale. Cores revealed no water between the final shut-off and bottom and the well appears to be potentially the deepest producer in the world. The hole was successfully reamed to bottom and little trouble is anticipated in landing and cementing the casing. It will be the second longest string of casing ever run, being exceeded only by the 5¾-inch string cemented at 9144 feet in Shell Oil Company's Nesa 11 at Long Beach.

Should Hathaway 7 be a large producer, an important new zone will have been ushered in at a most inopportune time. Several operators have plans carefully laid for the development of the zone if it proves productive, but there will not be the rush which followed shallower discoveries.

Several good wells were completed during the closing days of the December 16-31 period. Union Oil Company, already second largest producer in the field, added sharply to its potential with the completions of Alexander 19 and Bell 46. The former came in with an initial production of 8000 barrels from 8000 feet, while the latter was a 7000-barrel producer at 7985 feet. Universal Consolidated Oil Company maintained the fast pace it set early last year, by completing Blanchard 12 as a 4000-barrel producer at 7871 feet.

There are about 175 drilling wells in the field, nearly all of which will be tested in the Clarke or upper Hathaway zone.

Seal Beach Wildcat

Los Angeles—Continental Oil Company is drilling at 6050 feet in Bryant 1, a wildcat test northwest of the Alamitos Heights section of the Seal Beach field, and in the absence of important oil showings the well offers little promise of extending the field along a fault line which supposedly cuts a part of the producing area. Production is found at a much shallower depth in the Seal Beach field and failure to find familiar markers is considered significant. Shell Oil Company, drilling on an extension theory southeast of the main field, has passed 4000 feet, with sand and shale alternating and no cuts in evidence.

Long Beach

Long Beach, Calif.—Drilling in the Long Beach field is not expected to show an appreciable drop below the present scale of activities for several months, although the present conservation agreement probably will be renewed for another 90 days, beginning February 1. Occasional completions around the edges have had a stimulating effect upon development and new locations have about kept pace with new wells. Completion of a 1000-barrel well in the Los Cerritos district by the A. H. McFarland Syndicate has again attracted a following to this shallow sector, but it is not expected that such a high average for new wells will be maintained. The new producer was completed at the unusually shallow depth of 4260 feet. The southeast end of the field, where several good completions have been made during the past month, is especially active. Most of the new locations are being made in this area. Drilling wells for the field total 101, with about 25 active locations and rigs.

Louisiana--Arkansas Field Notes

Drilling Campaign Starts at Zwolle; Sarepta Area Also Active

SHREVEPORT, LA.—An extensive drilling campaign in the Zwolle field, Sabine Parish, which was anticipated after the first of 1930 is beginning to take definite shape with six new locations made during the last week in that area bringing the total number of operations there to 24.

Only one completion was recorded in that district during the week, this being the abandonment of a deep test drilled four miles north of the older part of the field, R. L. Gay, Trustee's Long-Bell Lumber Company 1, Section 26-8-14, abandoned as a dry hole at 3663 feet.

None of the four holes nearing the testing stage at Zwolle have been completed but Olsan Brothers in Hooker 1, (formerly carried as Keelan 1) in Section 27-8-12, a half mile north of Gay's Bowman-Hicks A-1, Section 34-8-12, has had 6⅝-inch casing set at 2333 feet with total depth of 2430 feet in chalk rock. These operators claim a break in the chalk rock from 2408 to 2421 feet which showed oil. They also reported they were losing returns. This test hit chalk rock at 2357 feet and tested dry in a drill stem test at 2370 feet. Surface elevation of Hooker 1 is 292 feet and of the Bowman-Hicks A-1 334.5 feet. Four miles northwest of Gay's Bowman-Hicks A-1, Sabine Oil & Gas Company is coring hard chalk rock at 2300 feet, after bailing dry at 2216 feet and later having the same experience at 2263 feet, also in the chalk rock.

Incidentally, H. D. Easton, the geologist who made the location for all of the five present producers in the Zwolle area, calls attention to the fact that the chalk rock formation referred to in Zwolle operations, is an operating term and that the pay formation may be found in the Nacatosh, the Marlbrook Marl or the Annona chalk which are found in Zwolle in the order named.

G. M. Le Grande drilling Haley 1, Section 6-7-12 in the outskirts of the town of Zwolle, three miles southwest of Bowman-Hicks A-1, has made something of a secret of the depth of his test. He is setting six-inch casing, probably around 2100 feet although other estimates place it as low as 2210 feet. Just what formation he is in is not known, but he was in sandy shale at 2014 feet and in shale at 2070 feet.

Three miles north of the older part of the field, A. H. Tarver and Associates are setting 8¼-inch casing at 1870 feet in Long-Bell Lumber Company 2, Section 18-8-13, total depth being 1962 feet. The same operators have about completed rigging up for Sabine State Bank 1, Section 27-8-12 in the eastern extension of the field.

Ohio Oil Company is drilling hard rock at 1420 feet in Bowman-Hicks 1, Section 35-8-12 and has set 10-inch casing at 236 feet in Bowman-Hicks 2, in Section 33-8-12. J. C. Tippett has derrick up for Hughes 1, Section 36-8-12. Two locations were announced during the week by Ruston Drilling Company. Rig is being moved in for Holliday 1, NE NW, Section 35-8-12, and derrick is up for Bowman-Hicks 1, NE NE, Section 4-7-12. Haynes Brothers are rigging up and ready to spud in Myer 1, NW NE, Section 28-8-12. Amerada Petroleum Corporation has made its first location, Bowman-Hicks 1, NE NE, Section 33-8-12.

More Leasing

Two transfers of acreage of some magnitude were made in Zwolle during the week. S. D. Hunter, local oil operator, who with the Standard Oil Company of Louisiana recently acquired 10,000 acres southeast of the new part of the field from Sabine Lumber Company for $150,000, bought 1200 acres from Long Leaf Lumber Company for an announced consideration of $90,000 with a stipulation to drill five tests. Some figures place the consideration in this transfer as high as $150,000 also. The land is in township 8, range 12, township 8, range 11, township 7, ranges 12 and 13.

The only 40-acre tract available in Section 34-8-12 in which the extension producer is located, was sold during the week to Walter Quinlan of Dallas, Texas, for a consideration of $40,000, three-fourths cash and one-fourth from production. Quinlan will drill two tests at once on this 40 acres which is located in the northeast quarter of the section.

Reports continue to circulate of various offers made to Walter E. Cooke of Paterson, New Jersey, who owns a two-thirds interest, with R. L. Gay, owning a third interest in 30,000 acres in Zwolle,10,000 acres being under lease in the Loring (eastern) part of the field surrounding Bowman-Hicks A-1. Reliable reports have it that Cooke and Gay were offered three million dollars for their 10,000 acres in Loring, one-third in cash, the rest from first half of production, with an additional overriding one-twenty-fourth royalty on all wells over 50 barrels daily capacity. As far as can be learned neither offer was accepted. Figures as high as ten million dollars for the entire 30,000,-acre block are mentioned in talk of various offers, part of this sum of course in production.

Daily runs from the Bowman-Hicks A-1 during December aggregated 89,-455 barrels with its total yield since completion in excess of 100,000 barrels. The four producers of Cooke and Gay in the older part of the field put 16,-312 barrels through the pipe lines during December, the total yield of the older part of the field in Section 14-7-14, for the year 1929, being 63,630 barrels. The four wells' daily average production is now 620 barrels. They are producing from the chalk rock.

Arkansas

In the old Urbana district of Union County, Arkansas, where several gassers were completed at a level around 2600 feet in 1926, later yielding to salt water encroachment, Marine Oil Company apparently has hit the deepest oil production yet attained in South Arkansas in Thompson A-3, SW NE Section 10-18-13, six miles southeast of Champagnolle production. In a drill stem test at total depth of 3535 feet, Marine Oil Company obtained over 16 fourbles of oil in about a quarter of an hour. There was no sign of water. This oil is undoubtedly in the Woodbine formation, although it is nearly 300 feet below the deepest producer in Champagnolle whose deeper sand is Woodbine. Preparations are being made to set casing.

The Urbana area was the scene of the first wildcat ever drilled, it is said, in South Arkansas, a test of nearly 3000 feet in depth being abandoned as dry in 1916.

Magnolia Petroleum Company during the last week, apparently uncovered a new and deeper gas producing

ANOTHER BETTIS SUCCESS

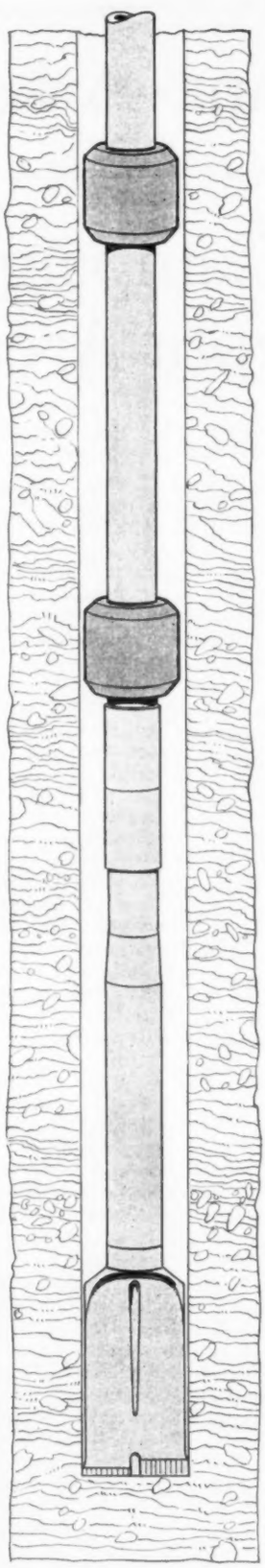
Keeps Drill Centered

Keeps Hole Straighter

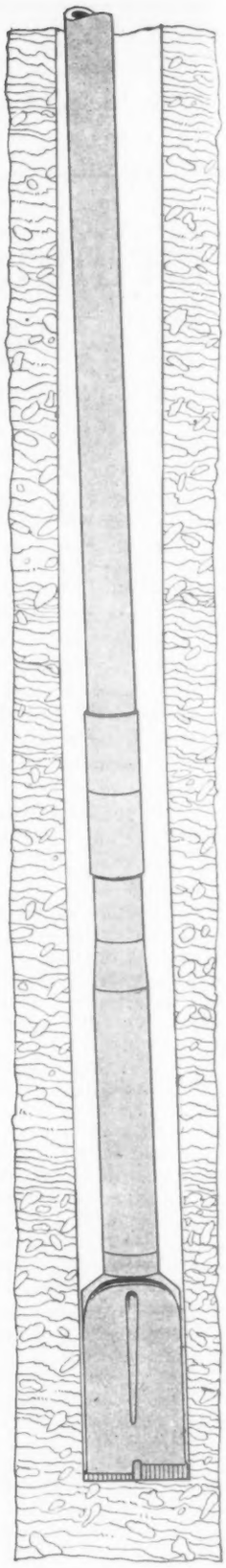
Relieves Vibration

FULLY PATENTED

Group photograph of various Bettis Products. The smaller rubbers are the 5" Bettis Protectors. The medium size are 12" Bettis Drill Stabilizers. The largest size is of Bettis Core Barrel Guide.

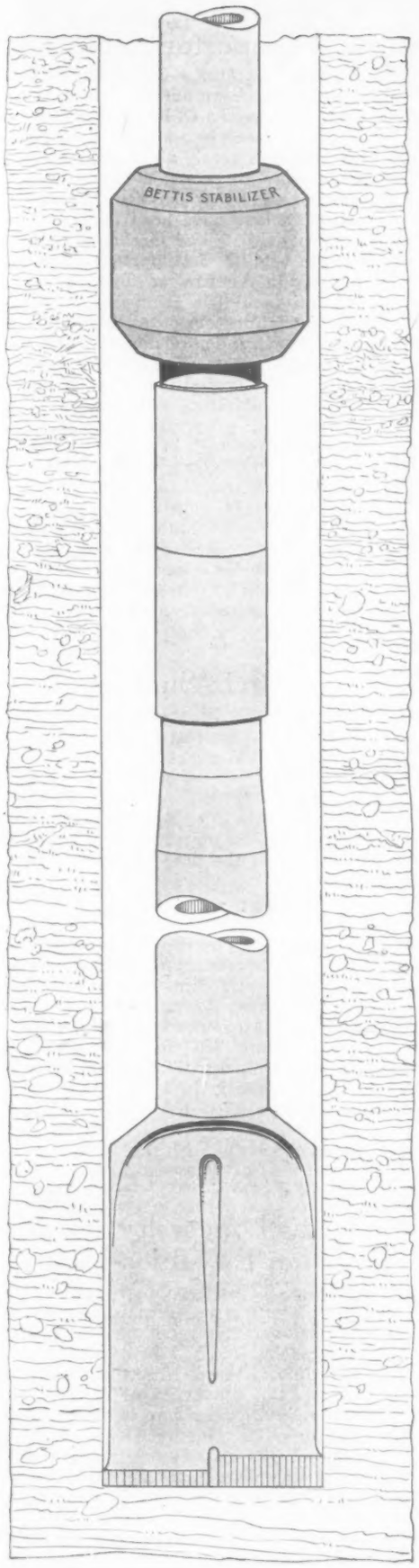


Drill stem showing two Bettis Drill Stabilizers in place, preventing wobble and excessive vibration of the drill and string.



Illustrating a drill string without Bettis Stabilizer, encouraging twist-offs and crooked hole.

"Best bet yet"



Illustrating Bettis Drill Stabilizer in position immediately above the collar.

BETTIS DRILL STABILIZERS

The greatest whip in the drilling string occurs just above the drill collar. The vibration and corkscrewing of the string in open hole is a principal cause of twist-offs and crooked hole. To overcome this problem and to offer support to the string so that it will retain its vertical position, Bettis Drill Stabilizers were designed. They have won the immediate acceptance of hundreds of drillers.

These Stabilizers are identical to Bettis Protectors in quality and design—simply larger in size to pass through casing ranging from 9⅝″ to 20″ inside diameter. The size mostly preferred is 10″ O.D. to fit 6″ drill pipe.

Bettis Drill Stabilizers are installed just like Bettis Protectors. They should be used in open hole from the bottom of the casing to the top of the drill but the vital place is on the drill stem and first stand of pipe where the greatest "hinging" occurs.

Companions of Bettis Protectors

You are no doubt using Bettis Protectors on your drill pipe within the casing. Make the protection COMPLETE all the way down by adding Bettis Drill Stabilizers. Install them every 10 feet.

Ask for Catalog and special performance data.

Patterson-Ballagh Corp.
Insurance Exchange Building,
Los Angeles

Texas and Gulf Coast Distributors:
BETTIS SALES CO., 616 Public National Bank Bldg., Houston

Oklahoma Distributors:
BAILEY & BECKER COMPANY, 410 Thompson Bldg., Tulsa
New York Office: 39 Cortlandt St.

Carried in stock at Los Angeles, Santa Fe Springs, Ventura, Kettleman Hills, Bakersfield, Coalinga, Long Beach, Tulsa, Houston, Wink, Texas; Calgary, Alberta, Canada; New York City.

horizon in two fields, namely Monroe and Bethany (Panola County, Texas).

In Monroe two gassers, both in Section 33-21-5e, Morehouse Parish near Bastrop, were completed approximately 175 feet below other gas production in the field. United States 1 is making 31 million cubic feet from total depth of 2369 feet with rock pressure of 1010 pounds while No. 2 in the same section gauged 45 million cubic feet with 1005 pounds rock pressure.

In passing from the level of other Monroe field gassers to the new gas rock operators encountered gummy shale. Rock pressure of old gassers in the vicinity of the two deeper ones is only about 300 pounds. Except in a few instances deeper tests before in Monroe have indicated that a body of volcanic matter lies below the Monroe gas sand and that the Woodbine formation is entirely missing in that field. It was believed that the volcanic matter rested on the lower Cretaceous beds. It may be a stray sand has been encountered.

A sixth gas producing stratum is believed to have been encountered in Bethany in Magnolia Petroleum Company's G. C. Tiller 5 in Co-ordinate D-16 in Panola County, Texas, which gauged 15,073,000 cubic feet from total depth of 3186 feet with rock pressure of 1325 pounds. Bethany has a gas horizon at 900 to 1000 feet, another at 1900 to 2000 feet, another at 2200 to 2300 feet, a fourth at 2700 to 2850 feet, and last summer Calatex Oil & Gas Company went below 2900 feet to get a 26,000,000-foot gasser in Agurs 1 in the Womack Survey.

Sarepta Active

Two new locations, both made by The Texas Company, and the purchase of 400 acres in Section 30-23-11 by Phillips Petroleum Company of Oklahoma, from Sales & Walker Oil & Gas Company for Plain Dealing, Louisiana, for a consideration of $250,000, half cash and half in oil production, were the chief developments during the week in the recently revived Sarepta oil field in Bossier and Webster Parishes, southeast of the old Cartersville gas area. The Texas Company's two new locations are for J. W. Peyton 2, NE SW Section 25-23-12, and J. W. Peyton 3, NE SW Section 30-23-11, Deleware-Louisiana Development Company, whose Kilgore 1, Section 31-23-11, completed at total depth of 3164 feet, flowing 218 barrels daily through 2½-inch tubing, started a drilling campaign in that field, is rigging up to deepen Bolinger 2 in Section 31-23-11. Magnolia Petroleum Company has decided not to deepen Robertson 1, Section 26-23-12. However, there are now, including old tests being deepened in the southeast part of Cartersville, 16 operations under way in that area.

Magnolia Petroleum Company is shut down in North Louisiana's deepest test in the lower Trinity at total depth of 6975 feet. This is McCook & Hibbler 1, Section 22-21-10, Webster Parish. This test last autumn looked promising for a producer after 11 feet of rich oil sand was cored from 6947 to 6958 feet, 5¾-inch casing being set at 6947 feet. The 75 sacks of cement used did not hold back salt water which came in from above. More hole was later made from 6965 to 6975 feet but the hole tested salt water with a little gas in a drill stem test at 6963 feet.

After being shut down for months in Carter 1, Section 33-10-6, Lincoln County, Arkansas, a wildcat, Pine Prairie Oil & Gas Company have officially announced abandonment as a dry hole at 2176 feet. Another wildcat failure recorded was E. L. Chapman's Thompson 1, Section 4-17-15, Union County, Arkansas, which tested salt water at 2525 feet.

Work in Red Coulee Field Hindered by Lack of Fuel

Great Falls, Mont.—After having installed equipment to burn gas from the Vanalta Oil Company's discovery well on the Canadian side of the Red Coulee field, operators and drillers on the American side find it necessary to make changes and resort to fuel oil and coal for generating steam power because of an order from Canadian authorities prohibiting export of gas across the line. This is believed to be but temporary as it is said a new order will probably be made soon to permit export for this work. However, several wells are due for production on this side of the line and indications are they will follow the Vanalta producer and come in with both oil and gas.

Pure Blocks 40,000 Acres In San Joaquin Valley

Los Angeles.—Pure Oil Company has acquired leases on more than 40,000 acres of level land in the San Joaquin valley, the large blocks lying south of Merced and in both Medera and Merced Counties. This vast plain has been studied by geologists for some time and much of it has been geologized by geophysical methods. Pure Oil Company opened offices in Los Angeles more than six months ago and is now engaged in leasing additional acreage in other parts of California.

Buttonwillow

Bakersfield, California. — A string of 11¾-inch casing has been cemented at 4800 feet in Milham Exploration Company's Kern 6, located in the Buttonwillow district, where a large gas production has been developed, and a production test will be made if enough oil sand and shale is found within the next 200 feet. Kern 6 is located on the North Dome of the large Buttonwillow structure and is regarded as an important wildcat test.

Pier Drilling Assumes Important Role

Santa Barbara, California. — Pier Drilling on ocean permits issued by the state is expected to become of increasinb importance in Santa Barbara County, although nearly all of the tests now under way are principally for the purpose of validating permits. Clusters of new locations have been made at Carpenteria, Goleta and Orella, in addition to the regular development of ocean permits in the Elwood field.

Continental Oil Company is doing the validating work on 10 permits at Carpenteria and probably will drill one deep test to determine the value of the ocean strip offsetting the mainland leases. Oakburon Oil Company is building four piers near Orella and will drill one deep test, in addition to three shallow holes. General Petroleum Corporation is completing five piers on permits near Goleta and will immediately do the validation work on all ocean leases. Where the tide line apparently divides a structure, operators are obtaining permits and in most cases are required to show their good faith by drilling to a depth of 500 feet.

Kevin-Sunburst

Great Falls, Montana.—Test of [illegible] territory on the west side of the Kevin-Sunburst field which has always been considered promising [illegible] by Sunrise Producing Company which will drill its first well in that area soon. Litigation has prevented any action in this part of the field for some time.

Mahoney Dome

Casper, Wyoming.—Producers & Refiners Corporation and Midwest Refining Company's joint test to the deep horizons has changed to cable tools and was last reported drilling in the Embar below 4367 feet. This well is on the Mahoney Dome structure, in Carbon County, in what is known as the Lost Soldier district. A considerable showing of oil and gas was reported recently and the test changed over from rotary to cable tools.

Texas University Funds From Royalties Mount

Austin, Texas. — Oil royalties and lease bonuses and rentals paid in by Texas operators and companies accounted for $13,252,519 of the total sum of $13,877,519 credited to the permanent fund of the University of Texas at the close of 1929, according to W. R. Long, auditor. This institution is receiving oil and gas royalty checks monthly from operators with wells on its fee lands in Reagan, Crane and Pecos Counties in West Texas, and the sale of leases at regular intervals by sealed bids is materially adding to the permanent fund. Only the interest accruing from the permanent fund can be expended by the university, and the average rate of interest is 3.55 per cent.

Field Work More Productive In December

Initial production average substantially increased; proration steadies production curve

By H. J. STRUTH
Staff Economist

FIELD operations during December were decidedly more productive than during November. Although the number of well completions declined substantially during December, the quantity of new production obtained was almost as large as during November. This is emphasized by the fact that the average initial production per well for the United States was about 442 barrels during December, while during November the average was only 390 barrels. Completions during December were 1791, exclusive of Rocky Mountain states, while during November the total amounted to 1965 wells. Producing wells completed during December were 978, yielding a total initial oil production of 433,264 barrels. In November, the number of producing wells was 1139, yielding a total initial production of 442,170 barrels. Despite the fact that drilling results were so highly productive, however, the daily average crude oil production was maintained at a more steady level, being slightly below the total recorded during November. This demonstrates the apparent effectiveness of proration, particularly in California and Oklahoma.

The total quantity of crude oil produced during December was approximately 81,319,950 barrels. Compared with November, when the total was 79,285,050 barrels, this represents a gain for the month of 2,034,900 barrels. In this connection, it is significant to point out that the difference is due to the fact that comparison is made between a 30-day and a 31-day month, whereas, the daily average for the periods compared reveals a decline during December of nearly 20,000 barrels a day. Texas, Gulf Coast, Arkansas, Rocky Mountain states and California were chiefly responsible for the more favorable aspect of the producing situation during December. However, aside from the Gulf Coast area, all major producing areas of the United States contributed to the increase indicated in total crude production.

Operations in the Eastern States during December were hampered somewhat by snow which slowed down the number of completions, resulting in a lower initial production. This was particularly notice-

UNITED STATES PRODUCTION

Following is the gross crude oil production (in barrels of 42 gallons) in the United States during December, as compiled from daily averages reported by the American Petroleum Institute. There are some differences between the figurs shown blow and those contained in detailed tables appearing elsewhere in this issue. The figures below are the result of calculating A. P. I. estimates for the representative fields.

	Daily Average Production December	November	Total Production
Oklahoma	647,100	640,300	20,060,600
Kansas	111,300	110,050	3,451,000
Texas (outside of Gulf Coast)	688,550	702,350	21,345,800
Gulf Coast	161,550	171,200	5,007,800
North Louisiana	38,750	36,750	1,201,500
Arkansas	61,950	63,700	1,921,000
Eastern States	140,250	135,400	4,347,950
Rocky Mountain	75,800	76,550	2,350,650
California	697,850	706,500	21,633,650
Total	2,623,100	2,642,800	81,319,950

UNITED STATES FIELD STATISTICS

Following are the completions, showing oil wells, gas wells, failures and initial production of crude oil and gas by states for the month of December, as compiled by THE OIL WEEKLY.

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. gas*
Arkansas	26	18	..	8	605	..
California	74	66	..	8	107,255	..
Illinois	42	29	..	13	1,586	..
Indiana	16	8	2	6	205	9½
Kansas	78	43	..	35	7,970	..
Kentucky	122	77	16	29	5,162	14¼
Louisiana	81	23	30	28	10,986	371½
Michigan	28	19	..	9	4,050	2
Mississippi	1	..	..	1	...	..
New York	14	14	..	..	100	..
Ohio	169	53	66	50	1,813	68¼
Oklahoma	282	159	37	86	121,844	421½
Pennsylvania	157	129	18	10	406	14
Texas	594	308	44	242	170,796	996¾
West Virginia	107	32	62	13	486	51
Total	1791	987	275	538	433,264	1949¼

*Millions of cubic feet.
Note — Rocky Mountain data omitted.

PAST TWELVE MONTHS

The record for the past twelve months is an interesting study for comparative purposes, the following table giving the field statistics for all states:

Month—	Completions	Producers	Gas Wells	Failures	Initial Prod.
December 1928	1,742	981	250	511	429,869
January, 1929	2,068	1,221	262	582	746,564
February	1,434	830	150	442	236,071
March	1,677	911	207	549	468,424
April	1,556	843	206	507	399,646
May	2,084	1,119	295	670	437,731
June	1,598	913	200	485	407,782
July	1,725	986	226	513	420,033
August	2,552	1,507	337	708	541,720
September	2,169	1,310	234	624	448,283
October	2,447	1,414	301	732	433,990
November	1,965	1,139	283	543	442,170
December	1,791	978	275	538	433,264

Note—Rocky Mountain data omitted.

able in New York, Pennsylvania, Ohio, and Indiana. New York completed 14 wells during December, compared with 45 in November; Pennsylvania 157, compared with 270; Ohio 169, compared with 201; Indiana 16, compared with 20. Ohio exhibited the most marked change in initial production with 1813 barrels, compared with 3059 barrels in November, a decline of 1246 barrels.

In the Mid-Continent area, Oklahoma and Arkansas were the only states to show increases in well completions during December, all other states reporting fewer completions than in November. Analysis of initial production, however, reveals the month as decidedly productive. California, with fewer well completions reported a gain in initial production of 22,890 barrels; Oklahoma, a gain of 21,863 barrels; Louisiana, a gain of 2000 barrels. Texas proved to be the exception during December when the total initial production of the state showed a net decline from November of 49,470 barrels. The chief reason for this decline is attributed to decidedly smaller wells being completed in West Texas. While the number of completions in West Texas during December were practically unchanged in number, the total initial production of that area showed a decline of 70,597 barrels. A review of the November report, however, reveals that a number of unusually large wells were completed in this area during that month.

Wildcats

There was apparently more wildcatting in progress during December, since increases in wildcat completions were reported in California, North Louisiana, West Texas and Texas Gulf Coast. Wildcatting was particularly successful in North Louisiana, where eight producers contributed 6410 barrels of oil. Although 67 wildcat wells were completed during December, only 11 were classed as productive, yielding a total initial production of 6560 barrels. During November, seven wildcat wells proved to be productive, but the total initial production was only 462 barrels. The results obtained in North Louisiana will undoubtedly create increased activity in the sections where these successful producers were encountered.

Drilling operations in the Santa Fe Springs, California, field were perhaps of chief interest during December. Here, the campaign to probe the deep sands continued with renewed vigor, resulting in added consternation over the probable course of production. Since then, considerable pressure has been brought upon the gravity of the situation, with the result that further agreements have been drawn up, in an effort to prevent a recurrence of former chaotic conditions in that area. Apparently, all efforts will be directed against this evil practice and will result in improvement in the near future. During December, 34 wells were completed in the Santa Fe Springs field, with a total initial production of 78,850 barrels. This compares with 25 wells in November with a total initial of only 48,050 barrels. Incidentally, this field contributed the largest quantity of new production in the United States. Pecos County, Texas, exhibited the most pronounced decline in initial production, when the total declined 67,015 barrels. Well completions in the Winkler County area have practically passed out of the picture, with the encroachment of salt water making it more and more difficult to maintain production from existing wells. Apparently, the days of big gushers in this area will not be seen again. The Oklahoma City field, Oklahoma, is now the center of attraction in that state, with constantly increasing production difficult to prorate, while numerous spectacular flowing wells continue to becloud the market horizon there. Activity is also brisk in the Seminole area, where 40 producing wells completed yielded 44,809 barrels of oil. This compares with only 26 wells in November, with a total initial of 18,844 barrels. The field statistics for the Gulf Coast area are also of particular interest for December, since deep drilling in that area is contributing numerous large wells that are boosting the field totals to a considerable extent.

Detailed Field Statistics for December start on page 104

Analysis of total production by fields for December reveals some decided changes for betterment. Among the leading fields to show substantial declines were Long Beach and Ventura, California; Salt Creek, Wyoming; Seminole, Bowlegs, Searight, Little River, Mission and East Seminole, Oklahoma; Hutchinson County, Salt Flat, Howard County, Winkler County, Barbers Hill, and Humble, Texas. The largest increases in production were recorded by Midway-Sunset, California, Oklahoma City, Oklahoma, Sedgwick County, Kansas, Gray and Pecos Counties, Texas.

Mesa County, Colorado, Test Resumes Drilling

Denver, Colorado.—Argo Oil Company has been successful at last in recovering the casing and tools in the test on Highline structure, Mesa County, Colorado, for which it has been fishing since last October when it took over the test standing at 2700 feet to deepen the same. The string of 8¼-inch casing is now being re-run and good progress is anticipated from henceforth.

San Marcos Wildcat

Santa Barbara, California.—California Oil Properties has drilled through a layer of good oil sand between 3950 feet and 3980 feet in Fortine 1, a wildcat test near San Marcos, and will run a string of casing to 3950 feet for a test of the formation, which apparently belongs to the Sespe group. A good body of shale was found above the oil sand and little trouble is expected in obtaining a water shutoff.

Canadian Field Will Be Active in the Spring

Calgary, Alberta, Canada.—The new Red Coulee field continues to be the most interesting in the Dominion of Canada oil activity this winter. One well is already on production and three others are expected to be completed within a short time. The Maple Leaf Refinery is planning to increase the capacity of its plant at Coutts, and to lay a pipe line to the field. All new work, however, will be delayed pending the advent of good weather.

There are seven wells drilling in this district of which four are rigging up and will be spudded in immediately. There are, in addition, 15 locations spotted and report has it that spring will see no less than 50 tests drilling in the field.

The discovery well, drilled by Vanalta Oil Company, is producing from a sand which in the Turner Valley field corresponds to the Dalhousie. Logs of both fields are similar except that the Bentons are about 1000 feet shallower at Red Coulee; this reduces the drilling cost greatly. No well in the field has tested the Madison limestone from which depth a good production may be expected.

J. Ross Higgins has recently prepared a new map which gives complete information on the Red Coulee district: that part which lies in Alberta as well as that in Montana. The map shows the well sites, locations, and a complete list of acreage holders. Calgary Drafting Company is distributor.

Deep Tests Produce in Old Wyoming Shallow Areas

Casper, Wyoming.—A most interesting and important development has recently been announced from the old Dallas district in Fremont County, about 15 miles southeast of Lander, Wyoming. This old field has been producing since 1883 really, inasmuch as it was discovered by Captain Bonneville in that year and utilized as a tar spring. It has produced in the past some one million barrels of high grade black oil from the Embar sand. Two deep tests, one on each structure, were completed this month by the Dallas-Dome Wyoming Oilfields Company, which controls both fields, to the Tensleep sand, and in both cases fine production was obtained at what is nowadays known as shallow depths. The Dallas well is good for about 250 barrels at 1150 feet, and the Derby dome well is good for 150 barrels from 1325 feet. The Tensleep sand had been proved, previously, in the Hudson field, a short distance northwest of Lander, some years ago by Producers & Refiners Corporation whose holdings were afterwards taken over by the Midwest Refining Company. All three fields, Dallas, Derby, and Hudson, are alike and the proof at Hudson has practically established the productivity of the Tensleep at the other two fields.

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
BUTLER COUNTY—		
Empire Oil & Ref., Hess 19, ne se nw 18-26-5e	35	2645
COFFEY COUNTY—		
Cross et al, Fessenden 1, sw ne, 33-22-14e	*	1730
GREENWOOD COUNTY—		
Phillips Pet., Patterson 1, sw se sw 22-23-11e	140	1997
Sheedy et al, Sharp 5, nw se nw 5-24-13e	50	1620
HARVEY COUNTY—		
Jolly-Ogg Pet. Co., et al, Hupp 1, se ne, 22-23-1w	*	3220
Jolly-Ogg Pet. Co., et al, Schowalter 1, ne, 11-24-1w	*	3450
McPHERSON COUNTY—		
Derby Oil Co., Giffon 1, se sw, 11-19-2w	¶22¼	2935
Milmac Oil Co., et al, Decker 1, nw 11-20-3w	*	1500
RUSH COUNTY—		
Danciger Oil & Ref. Co. et al, Pivonka 1, c ne, 17-19-17w	*	4148
SEDGWICK COUNTY—		
Wentz Oil Corp., Bright 5, nw ne nw, 1-26-1w	45	3345
Gypsy, Hamant 4, nw, 14-26-2e	440	3157
STEVENS COUNTY—		
Argus Gas Co., Carpenter 1, c nw nw 29-33-36w	¶7	2780

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
CARTER COUNTY—		
Cotton Belt Pet. Co., Rexroat 10, nw ne nw sw 10-4s-2w	15	1817
Venmex, Pierce 1, se nw ne 30-1s-3w	*	3255
COTTON COUNTY—		
Barnsdall Oil Co., Bills 16, ne se sw 33-1s-10w	10	2154
Baldwin and Sultan, Rhone 6, ne, se se se 35-1s-10w	45	2202
CREEK COUNTY—		
Phillips et al, Koch 3, sw ne ne 20-19-9e	90	2265
H. U. Bartlett, Jackson 1, sw se sw 23-18-8e	¶1½	2820
E. P. Harwell et al, Colvin 1, ne sw sw se 31-18-11e	¶3	1668
Pawnee Production, Johnson 5, c se se 14-17-8e	5	2320
A. B. Ice, Wanake 5, ne se ne se 19-17-10e	2	636
Emerson, Berry and McCoy, Brown 1, nw ne 20-17-10e	45	2106
S. J. Mathews, Hughes 1a, ne 21-16-11e	¶2	2247
Wilcox Oil & Gas, Johnson 1, sw nw se 6-14-10e	30	2826
Jones et al, Roberts 1, ne nw sw, 26-13-12e	*	600
JOHNSON COUNTY—		
Smith and Kinsley, Lane 1, se nw, 29-1s-7e	*	2254
KIOWA COUNTY—		
John C. Head, School 1, cwl nw, 22-6n-16w	*	600
OKFUSKEE COUNTY—		
F. A. Havel et al, Grayson 1, sw se 23-11-11e	25	1644
Eagle Pitcher Lead & Zinc, French 5, se sw nw 17-11-12e	¶¾	2394
Schoengeldt et al, Hawkins 5, se ne sw 4-11-12e	*	1577
OKMULGEE COUNTY—		
I. M. Levine et al, Warner 2, nw se nw 24-14-12e	¶1½	1265
Sheridan, Peters 4, cnl se se 33-16-11e	*	2184
J. H. Rebold, Sugar 1, nw sw, 5-15-13e	*	2646
PAYNE COUNTY—		
Pure Oil Co., Kennedy 1, ne nw 9-18-5e	450	3641
Mulberry Oil Co., Sharrum 6, sw nw nw 5-17-4e	625	4159
POTTAWATOMIE COUNTY—		
Twin State Oil Co., Ray 1, nw sw sw 3-8-4e	*	4482
Healdton Oil & Gas, et al, Reade 1, se nw nw 8-9-5e	1615	4387
SEMINOLE COUNTY—		
The Texas Co., Chilcoat 3, se sw nw 4-7-7e	900	4230
Magnolia, Brame 1, ne 8-7-7e	16	4174
Magnolia, Brame 2, nw ne ne 8-7-7e	2590	3186
W. B. Pine, Bean 2, ne sw 13-7-6e	475	3242
Magnolia, Cudjo 1, ne 24-7-6e	¶12	3115
The Texas Co., Dindy 2, nw ne sw, 24-7-6e	¶22	3136
TULSA COUNTY—		
W. E. Brown et al, Oswald 4a, cwl se nw 6-17-13e	12	1445
WAGONER COUNTY—		
C. W. Gillett, McIntosh 7, cel nw se 25-17-16e	6	1312

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
LONG BEACH—		
A. T. Jergins Trust, Municipal 28	450	8000
McFarland Synd., No. 1	800	4260
Macmillan Pet. Corp., No. 9	300	6087
MARICOPA—		
North American Consolidated, Kerckhoff 7	600	3210
MT. POSO—		
Signal Oil & Gas Co., No. 15	100	1635
RICHFIELD—		
Union Oil Co., Morse 9	100	4260
SANTA FE SPRINGS—		
General Pet. Corp., S. F. 235	2600	8045
S. F. 237	3000	8000
Superior Oil Co., Wardman 4	9500	7901
The Texas Co., Weaver 6	5600	8096
Standlee 5	2000	7880
Matern 2-10	1600	7930
Wilshire Oil Co., Peterson 2-A	7950	3000
Ambassador Oil Co., Baker 15	600	7596
VENTURA—		
Shell Oil Co., Taylor 47	1800	7075

EASTERN STATES

NORTHWESTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
HANCOCK COUNTY—		
Newton Oil Co., Montgomery 16	12	1350
B. Porter & Co., Haley 31	20	1380
SENECA COUNTY—		
H. Coyle, Beck 2	¶¼	562
George Hiffman, Noble 1	*	1675
SANDUSKY COUNTY—		
S. Feasel & Co., Lehmann 1	*	1287
AUGLAIZE COUNTY—		
A. J. Schulte, Weiter 1	*	1203

MICHIGAN

Company, Well and Location	Initial Production Bbls.	Depth
MUSKEGON COUNTY—		
Rygo Oil Co., Daniloff 1	35	1914
Van Buren Dev. Co., Hubbell & Co. 1	10	2082
Fry & Buchannan, Fruitvale 1	*	2250

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
BRADFORD FIELD—		
South Penn Oil Co., Cross 016 pressure		
Minard Run 1	2	
Minard Run 2	2	
Minard Run 3	2	
Minard Run 4	2	
Minard Run 5	2	
Minard Run 6	2	
Bingham 576, tr 21	3	
Bingham 453, tr. 2	2	
Kinzue 199	8	
Taylor 1	2	
Redfield 17	2	
Redfield 18	2	
Midland-Taylor 57	2	
Curtis & Co. 52	2	
Bingham 212, tr. 22	3	
Gibson Oil Co., Bingham 2	5	
Robert Roy, Roy 7	4	
Minard Run Oil Co., Hamlin 6	2	
Cooper Oil Corp., Cooper 13	5	
Enright & Co., Enright 7	2	
A. Stover, Stover 31	3	
Mohan & Grant, Fee 43	3	
Mrs. E. Gildersleve, Quintruple 9	3	
D. J. Moody, Moody 32	7	
N. V. V. Franchot, Rounds 17	8	
Rounds 18	8	
Mary E. Barry, Givin & Co. 11	7	
Penn Pet. Co., Duke 2	3	
G. W. Smith Est., Smith 1	6	
Smith 2	7	
Smith 3	6	
Smith 4	7	
R. S. Pringle, Bingham 464, tr. 35	2	
G. C. Rice & Co., Weston 4	2	
Devore Oil Co., Fee 2	4	
Walters Est., Walters 11	4	
Associated Producers Co., Bingham 23	2	
C. E. Potter, Russell 10	4	
A. L. & M. L. Lilly, Middaugh 31	4	
Hazlewood Oil Co., Fee 203	2	
VENANGO COUNTY—		
S. Y. Ramage, Sicox 66	2	
H. J. Hoffman, Hoffman 8	2	
L. C. Cellner, Fee 4	2	
W. E. McAlevy, Fee 1	2	
J. B. Smithman, Three tracts 153	2	
GREENE COUNTY—		
Carnegie Natural Gas Co., Scott 8	¶¼	
Natural Gas Co. of W. Va., Powers 3	*	
ALLEGHENY COUNTY—		
M. Matkovich, Pittsburg Coal Co. 2	2	

NEW YORK

Company, Well and Location	Initial Production Bbls.	Depth
ALLEGANY COUNTY—		
J. H. Brahaney, Van Campue 1	2	
Perkins & Means, Fee 2	2	
M. C. Oil Co., Carls 5	2	
E. W. & H. C. Miller, Miller 1	2	

SUMMARIZED REVIEW OF FIELD RESULTS

	Completions This week	Completions Last week	Producers This week	Producers Last week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	4	11	2	6	..	1	2	4	42	131
California	16	20	15	20	..	..	1	..	37,000	48,300
Illinois	..	6	..	4	..	..	..	2	....	205
Kansas	12	17	5	7	2	..	5	10	710	5,628
Kentucky	15	18	10	16	..	1	5	1	48	972
Louisiana	10	15	4	5	4	5	2	5	1,730	817
Michigan	3	9	2	7	..	..	1	2	45	1,500
New York	4	18	4	18	..	..	..	..	8	52
Ohio	57	49	15	15	24	23	18	11	372	421
Oklahoma	32	73	17	45	7	9	8	19	6,951	12,911
Pennsylvania	48	87	46	84	1	..	1	3	165	243
Texas	124	88	62	40	13	10	49	38	29,629	11,621
West Virginia	17	22	4	4	11	11	2	7	35	40
Total	342	433	186	271	62	60	94	92	76,735	82,841
Increase this week	9	..	..	..	2	..	2	..	....	....
Decrease this week	..	..	85	..	..	..	..	..	6,106	....

WEST VIRGINIA

Company, Well and Location	Initial Production Bbls.	Depth
BOONE COUNTY—		
Mountain States Fuel Co., Hill-Prichard 1	¶1	....
Holstein 1	¶1	....
United Fuel Gas Co., Chew 1877	¶2	....
Hope Nat. Gas Co., Allen 7443	¶1	....
Unknown Parties, Zoikel 1	¶¼	....
Godfrey L. Cabot, Sutphin 3	¶2	....
Cameron O&G Co., Alderson 10	¶1	....
Pure Oil Co., Federal Coal Co. 40	¶1½	....
ROANE COUNTY—		
United Fuel Gas Co., Hadlin 4022	¶2	....
Virginian Gasoline & Oil Co., King 1	5	....
CLAY COUNTY—		
South Penn Oil Co., Phillips 7	20	....
MASON COUNTY—		
R. P. Bell & Co., Riley Jr. 1	5	....
CLAY COUNTY—		
Virginian Gasoline & Oil Co., Brown-Swan 4	5	....
MARSHALL COUNTY—		
Harmon Gas Co., Harmon 3	¶1¼	....
LINCOLN COUNTY—		
United Fuel Gas Co., Egnor 2897	¶¼	....
JACKSON COUNTY—		
Lester & Law, Kirkhart 1	*	....
KANAWHA COUNTY—		
United Fuel Gas Co., Littlepage 3971	*	....

KENTUCKY

WAYNE COUNTY—		
Bain & Hogue, Burnett 3	5	....
Pigeon Rock Oil Co., Stearns Coal & Lumber 13	5	....
Harmon & Funk, Catron 1	1	....
M. D. Shearer, Coyle Heirs 7	*	....
W. O. Southern Jr., Jones & Co. 11	2	....
Smith & Cameron, Bell 3	*	....
LAWRENCE-JOHNSON COUNTIES—		
Swiss Oil Corp., Lyons 34	5	....
WOLFE COUNTY—		
A. Burnett, Bush 2	3	....
ESTILL COUNTY—		
Gate City Oil Co., Marcum 9	1	....
DAVIESS COUNTY—		
Penn-Indiana Oil Co., First Nat. Bank S. W. Trust Co. 11	6	....
OHIO COUNTY—		
J. E. Hare, Howard 4	10	420
Armistead Oil Co., Newton 3	10	....
Petroleum Explo. Co., Rhodes 2	*	725
E. G. Purtle & Co., Roach 6	*	....
Cumberland Petroleum Co., Kirk 2	*	400

SOUTHEASTERN OHIO

WASHINGTON COUNTY—		
Hilltop O&G Co., Oliver 2	*	....
H. C. Baker & Co., Crum 1	*	....
American Oil Dev. Co., Deist 4	2	....
Fred D. Meister & Co., Berg 2	2	....
Meister & Blair, Fee 9	*	....
Shackles & Co., Thomas 1	¶½	1293
Otto Becker & Co., Dunbar 4	¶¼	1035
MONROE COUNTY—		
Ohio Fuel Gas Co., Carpenter 1	¶¼	1721
Crew-Levic Co., Winland 11	*	1629
Payne & Swarthout, Schumacker 1	2	1640
Easter Oil Co., Crum 5	*	1308
MORGAN COUNTY—		
Ohio Fuel Gas Co., Ellis 3	*	733
Choquill & Co., Archer 13	¶¼	1434
Squires Bros. Kincaid 13	*	550
NOBLE COUNTY—		
Ohio Fuel Gas Co., Kackley 1	*	1285
Metcalf & Robinson, Heister 6	*	737
Permain Oil & Gas Co., Blake 6	¶½	1600
JEFFERSON COUNTY—		
August Becker, Trustee, Becker 13	10	....

CENTRAL OHIO

SUMMITT COUNTY—		
Wiser Oil Co., Martena 1	¶½	3672
Eagon & Co., Selzer 1	¶1	3517
F. A. Brendall & Co., Kerr 1	¶2	4022
Pille & Co., Myers-Pille 1	¶1¼	3985
East Ohio Gas Co., Mason 2	*	4021
ATHENS COUNTY—		
Coleville O&G Co., Burrows 1	¶¼	1027
Fairfield Oil & Gas Co., Wilson 2	¶¼	1483
Ohio Fuel Gas Co., Enlow 1	*	1278
Posten 1	¶½	1696
ASHLAND COUNTY—		
Ohio Fuel Gas Co., Hess 1	¶¼	....
Jones 2	¶¼	....
Faulkner & Co., Howey 2	¶¼	674

Company, Well and Location	Initial Production Bbls.	Depth
HOCKING COUNTY—		
Preston Oil Co., Sunday Creek Coal 80	¶2½	3425
Sunday Creek Coal 81	*	3488
W. L. Spangler, Hanson 16	¶¼	2212
LICKING COUNTY—		
Everette Gas Co., Claypool 3	70	2892
Arkansas Natural Gas Co., Mizer 5	20	837
COSHOCTON COUNTY—		
Spindler & Co., Wolford 5	70	....
Ohio Fuel Gas Co., Barnes Coal & Mining 1	¶1	2603
MUSKINGUM COUNTY—		
Ohio Fuel Gas Co., Wigton 1	23	3655
Wittmer Properties Trustee, Romine 1	39	4083
MEIGS COUNTY—		
Tyree & Co., Carnahan 14	10	628
Palmer & Root, Hill 1	*	1997
STARK COUNTY—		
Penn O&G Co., Limbach 1	¶4	3959
F. A. Brendall & Co., Smith 1	¶4	4022
WAYNE COUNTY—		
Ohio Fuel Gas Co., Keeler-Anderson 1	¶¼	....
Boreman 1	*	....
LAWRENCE COUNTY—		
Gordon Oil Co., Shearer 1	60	3505
GUERNSEY COUNTY—		
Ohio Fuel Gas Co., Robinson 1	25	3575
PERRY COUNTY—		
Trimmway O&G Co., Critchet 1	7	1156
RICHLAND COUNTY—		
Ohio Fuel Gas Co., Innes 1	¶2	....
LORAIN COUNTY—		
J. W. Cushing, Richards 1	¶1	....
CUYAHOGA COUNTY—		
Hulse & Kundtz, Kundtz 1	*	....

ARKANSAS

OUACHITA COUNTY (Smackover)—		
Simms Oil Co., N. Johnson 1, 34-15-15	40	1987
Texas Co., Berry 5, 4-16-15	2	2346

NORTH LOUISIANA

BOSSIER PARISH (Elm Grove)—		
Louisiana Gas & Fuel Co., Thigpen-Herold 4, 12-17-12	¶1	1738
CADDO PARISH (Pine Island)—		
H. J. Bussa, Herndon 7, 15-21-15	10	1895
MOREHOUSE PARISH (Monroe)—		
Magnolia Pet. Co., U. S. 6, 33-21-5e	¶31	2369
Magnolia Pet. Co., U. S. 7, 33-21-5e	¶45	2382
WEBSTER PARISH (Cotton Valley)—		
Standard Oil Co. of La., Thos. Creighton, Jr. 1, 33-21-10	¶32½	4693

SOUTH LOUISIANA

EVANGELINE—		
Yount-Lee Oil Co., Houssiere-Latrielle 7	1500	7450
PORT BARRE—		
Gulf, W. H. Hoskins 1-A	200	3415
STARKS DOME—		
Texas Gulf Sulphur Co., Lutcher-Moore 4	*	1460
VINTON—		
Vinton Pet. Co., Gray 7, dd	20	2800

TEXAS

TEXAS GULF COAST

BARBERS HILL—		
Humphreys Corp., Kirby 8-A	5000	6416
Kirby 6-B	10	4120
Sinclair, McKinney Fee 1	*	5384
BATSON—		
Ada Belle Oil Co., Carlton 130	3	1285
ESPERSON DOME—		
Cranfill-Reynolds Co., Vajdak 1-A	¶3	5750
HULL—		
Empire, Barngrover 30	600	3920
HUMBLE—		
The Texas Co., Dunman 4	1500	5144
House 23	*	4146
LOST LAKE—		
Pure, Mayes 8	*	3086
MOSS BLUFF—		
Humble, Sterling 6	800	5666
PIERCE JUNCTION—		
Pure, Herman Est. 2	2500	4800
SARATOGA—		
Rio Bravo Oil Co., Cotton 86-A	110	560

Company, Well and Location	Initial Production Bbls.	Depth
SOUTH LIBERTY—		
Sun Oil Co., Mitchell 52	2800	3520
Empire, Groggan 10	30	3600
SUGAR LAND—		
Humble, Sugar Land Industries 2-B	800	3772
WEST COLUMBIA—		
Humble, Smith 3	*	5100
Continental, Hogg 1	*	6270
CLAY CREEK—		
Sun Oil Co., Clay 2	*	2280
REFUGIO—		
Saxet Oil Co., Holmes Heard 3, n end field	50	3720
Independent O. & G. Co., J. F. B. Heard B-1	550	3666
Union Producing Co., Mitchell 2	¶50	5461

SOUTHWEST TEXAS

BASTROP COUNTY—		
Humble, Hasler 1	*	1268
BEE COUNTY—		
Nichols et al, Hicks 2	¶1½	1918
Neuman & Spear	11	1991
MAVERICK COUNTY—		
The Texas Co., Bandera Co. Ld. 1, 15 mi e Eagle Pass	*	4770
DARST CREEK—		
Magnolia, A. M. Baker 1	*	3050
Humble, Sallie Wilson 2	480	2657
L. G. Denman 1-A	265	2597
D. D. Baker 3	900	2621
L. C. Turman, Guadalupe Co. 1	1800	2623
Empire, Wilson Dowdy 1	900	2620
The Texas Co., Posey 1	1800	2605
DUVAL COUNTY—		
Humble, Koehler 38	25	1739
GUADALUPE COUNTY—		
Adams & Lisles, Zaboroski 1	*	2722
WEBB COUNTY—		
E. H. Buckner, Bruni 1	¶25	2282
ZAPATA COUNTY—		
Harry Fansler, Cuellar 1	¶40	1676
ZAVALLA COUNTY—		
Tex. Gas & Fuel Co., West 2	*	1900

WEST TEXAS

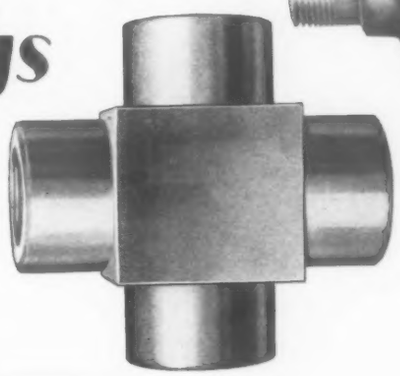
CRANE COUNTY—		
Warner-Quinlan Co., University-Weekly 6	320	3001
HOWARD COUNTY—		
Continental Oil Co., Clay 3-E	60	1798
Moody Corp., Roberts 14-B	15	1368
Roberts 31-B	65	2620
Roberts 5-D	60	2950
PECOS COUNTY—		
Landreth Prod. Corp., University 3-D	30	1687
UPTON COUNTY—		
Humble O&R Co., R. P. Ricker 13	200	2208

CENTRAL WEST TEXAS

BROWN COUNTY—		
Arcadia Ref. Co., Truehart 1	25	1116
Cranfill-Reynolds Co., Bull 3	50	1156
J. H. Green et al, Hill 1	*	860
W. H. Hammon et al, Fitzgerald 1	*	1342
McGahey et al, Mauldin 1	*	1410
S. B. Owens, Inc., Whitesides 2	200	1318
The Texas Co., Johnson 6	120	1322
Young Bros.-Alexander-Woodley Pet. Co., Hickman 24	180	1319
COLEMAN COUNTY—		
Broderick & Calvert et al, Buck 2	*	2008
Independent O&G Co., Ballard 1	*	3685
Levi Smith et al, Morris 9	100	2035
EASTLAND COUNTY—		
Belva Oil Co., Good 9	40	3492
Hoffman & Page, Harbin 6	45	1302
Hopkins et al, Rio Bravo 1	¶1¾	1493
Ed. V. Parsons et al, Scott 1	*	3781
Pitzer & West, Reagan 1	*	1316
McCULLOCH COUNTY—		
Lanning et al, Commercial State Bank 1	*	554
PALO PINTO COUNTY—		
Jack Dalton Oil Co., Dalton 7	¶½	4167
Frank Walker et al, Smith 1	¶1½	2984
SHACKELFORD COUNTY—		
F. W. Holder et al, Jackson 2	*	1160
Humble O&R Co., Davis 5-A	*	1862
Klinger et al, Muse 1	5	694
STEPHENS COUNTY—		
Herbert Oil Co., Caton 1	125	3238
SAN SABA COUNTY—		
Tylee et al, Winkler 1	*	1325

(See Page 80)

Alco 10,000-Lb Forged Steel Fittings



Complete Control of Highest Pressures

Choking back to control the production of high pressure flowing wells puts a greatly increased strain on the well hook-up. To avoid costly blowouts, it is economy to use the best fittings obtainable. For perfect control with absolute safety, bean down your well with Alco Flow Beans and use Alco 10,000-16 Forged Steel Crosses, Tees, Ells, Combination Cages, Nipples, Bull Plugs and Swage Nipples for the christmas tree. Bored, machined and threaded on the lathe, from solid forgings of highest quality steel, they have ample reserve strength for any gas or oil pressure yet encountered in any field.

ALCO OIL TOOL CO., Inc.

P. O. Box, "A", Compton, Calif.
Taft—Ventura — Kettleman Hills

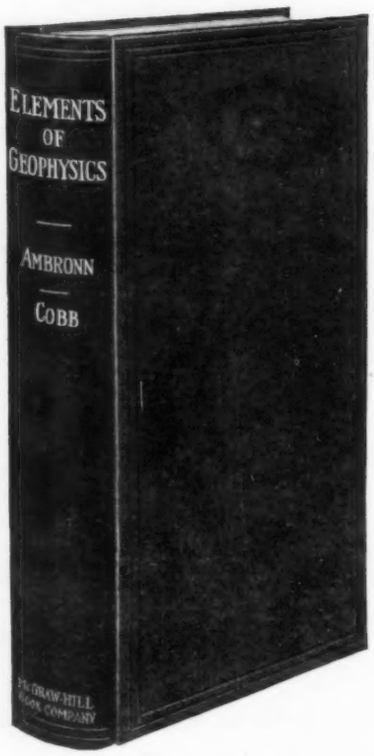
6101 Texas Ave., Houston, Texas.

831 East "G" St., Oklahoma City, Okla.

OIL WELL ALCO TOOLS

Geophysical Exploration

for the discovery of minerals, oil and gas



An authoritative discussion of geophysical methods of exploration in mining and hydraulics, in the solution of water supply problems and as an auxiliary to geologic research. The book summarizes the scientific background of geophysics and describes exact methods of geophysical procedure.

Elements of Geophysics

By RICHARD AMBRONN

Gottinger

Translated by M. C. Cobb, M.A., Ph.D.

This is the first treatment in English of a subject of real and rapidly growing importance to the practical geologist, the petroleum geologist and the mining engineer.

The book presents a broad survey of this new field of investigation, reviewing, developments of the various divisions of geophysical application summarizing the results which have been accomplished. At the same time it outlines all established geophysical methods in clear, terse, practical fashion.

CONTENTS

I. The Development and Present Position and Geophysical Methods Applied to Prospecting.
II. The Influence of the Subsurface Formations on the Gravitational Field at the Surface of the Earth.
III. Magnetic Methods of Investigation.
IV. The Use of Radioactive and Atmospheric-electric Measurements for Geophysical Prospecting.
V. Energy Currents.
VI. Electrical Methods of Prospecting.
VII. The Investigation of the Structure of the Subsoil by Means of Elastic (Seismic) Waves.
VIII. The Distribution of Temperature in the Earth's Interior and the Use of Temperature Measurements in Applied Geophysics.

372 pages, 6x9, 84 illustrations, $5.00

GULF PUBLISHING CO., 3301 Buffalo Drive, Houston, Texas

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
GRAY COUNTY—		
Magnolia Pet. Co., J. E. Wright 1	¶6-1000	2838
Operators Oil Co., Cook-Faulkner 6	¶12-1000	2921
H. B. Lovett 1	40	3061
The Texas Co., G. H. Saunders 13	¶10	4450
G. H. Saunders 17	¶3-1050	2523
White Eagle O&R Co. et al, S. Faulkner 3	¶25-1600	2840
HUTCHINSON COUNTY—		
Phillips Pet. Co., Johnson-Claire 1	¶20	3130
POTTER COUNTY—		
Canadian River Gas Co., R. O. Allison 1-A	32	2815
WHEELER COUNTY—		
Lone Star Gas Co., Simms Bros. 1	¶12	1670
Murchison-Fain-McGaha, W. L. Cooper 1	¶20	1808

NORTH TEXAS

ARCHER COUNTY—		
Atlantic Oil Prod. Co. & Johnston, Prideaux 3	*	765
Barnsdall Oil Co., Wilson 9-A	130	1710
L. T. Burns & Long, Turbeville 8	40	1469
Burns-Long & Grebin, Collins 1	*	1500
C. W. Clark & Douglas Oil Co., McClure 1-B	*	1341
L. H. Cullum et al, Richardson 1	*	1360
Gilliland & Rosser, Walsh 1	*	1403
F. C. Grebin et al, Easterling 1	*	1475
Hedrick-Camp Drlg. Co., Wilson 2	*	1876
Magnolia Pet. Co., C. F. Kunkel-Dietrich 6	70	1173
McLaughlin Bros. et al, Justice 1	15	1075
A. P. Nicholson et al, Taylor 1	*	750
Producers Drlg. Co., Carson 1	*	1804
BAYLOR COUNTY—		
Consolidated Oil Co. et al, Portwood 5	125	1418
Portwood 6	225	1402
CLAY COUNTY—		
J. F. Merrick et al, Byers 3	*	1020
COOKE COUNTY—		
Camp O&G Co., Belz 1	*	1225
Danciger O&R Co., Huggins 16	70	1305
C. C. Lanier et al, Young 1	*	2010
JACK COUNTY—		
C. W. Boller et al, Raley 2	70	3182
P. F. Gwynn et al, Rankin 1	25	3011
Panhandle Ref. Co., Eaton-Daniels 3	385	3112
Panhandle-Rathke Oil Co., Shanafelt 2	35	3113
Republic Prod. Co., Bryson 1	*	5258
WICHITA COUNTY—		
Arkansas Fuel Oil Co., K&K 36-B	80	1775
K&K 1-C	*	2018
Bateman & Dingee, Taylor 1	*	2107
Duncan & White, Parker 2	*	1854
Harris & Peckham, Daume 1	*	1853
McCarty Oil Co., K&K 21	*	1818
Mid-Continent Hold. Corp., Wilkerson 10	*	760
E. J. Stump & Co., Barton 1	*	1785
WILBARGER COUNTY—		
Cosden Oil Co., Waggoner 5-D	400	2670
Lido Oil Co., Waggoner-Sigler 1-C	190	2674
Waggoner Ref. Co., Waggoner 7-P	200	2670
YOUNG COUNTY—		
O. Bratcher et al, Cullers 4	25	575
Perkins-Cullum et al, Deitrich 4	125	1145
Sun Oil Co., Deitrich 18	30	1153

EAST TEXAS

PANOLA COUNTY (Bethany)—		
Magnolia Pet. Co., G. C. Tiller 5, Co-ord D-16	¶15	3186

Sunray Will Move to Larger Quarters

Tulsa.—Sunray Oil Company will move February 1 to the seventh floor of the Philcade Building, Tulsa, from its present location on the fourteenth floor of the Exchange National Bank Building. The move is being made to secure larger quarters, which have been made necessary through expansion of the company, including the purchase of several concerns, most important of which were the Oil Operators Company and the Homaokla Oil Company.

HE LANDS HIS PLANE ON MAIN STREET

. . . and taxis past a BRIDGEPORT STORE!

The local druggist at Hobbs . . headquarters for New Mexico's new oil field, lands his plane on the Main Street. He parks it in front of his store, located in the only brick building in Lake County. The nearest railroad is 55 miles away . . a long haul to truck in the heavy supplies needed by oil drillers . . . . Bridgeport, however, through its branch store at Hobbs, offers complete cable and rotary tool service to this new field, with a full line of rental tools, backed by the usual 24-hour Bridgeport Service . . . . For real help in solving all your drilling and fishing problems, CALL BRIDGEPORT FIRST . . there's a Bridgeport store in every principal oil field . . . . . .

"BRIDGEPORT RENTAL SERVICE - MOST EXTENSIVE - LEAST EXPENSIVE"

THE BRIDGEPORT MACHINE COMPANY

GENERAL OFFICES & FACTORY

WICHITA, KANSAS

Branches Throughout The Oil Fields

PERMITS GRANTED FOR NEW WELLS

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountain States.

State—	Week ending Jan. 4	Previous Week	Total this Month	Total this Year	This Week 1929	This Month 1929	1928 Year Total
Arkansas	5	..	5	5	5	5	331
California	21	12	21	21	22	22	1,207
Louisiana	17	3	17	17	11	11	680
Kansas	10	15	10	10	11	11	1,032
Oklahoma	31	77	31	31	53	53	3,744
Texas	171	..	171	171	95	95	8,297
Total	255	107	255	255	197	197	15,291

ARKANSAS

OUACHITA COUNTY—Standard Oil Co. of La., Shreveport, La., Geo. Powell 10, 200 ft s and 160 ft w, nec nw¼ 34-15-15.

SEBASTIAN COUNTY—M. W. Greeson, E. G. Spears 1, 320 ft w and 320 ft s, nec se ne 9-7n-29.

UNION COUNTY—Root Ref. Co., Simmons 1, 150 ft e and 150 ft n, swc nw sw 13-16-15. Wisinger & Ball, Lacy 1, 557 ft w and 181 ft s, nec nw¼ 6-18-15. Ohio Oil Co., J. M. Gregory, Tr. 1, 330 ft s and 330 ft e, nwc sw se 1-17-14.

LOUISIANA

ACADIA PARISH — Yount-Lee Oil Co., Beaumont, Houssiere 47-9s-2w, 5678 ft e and 712 ft n of sw; Latrielle 8, cor. of Sec.

BOSSIER PARISH—The Texas Co., Shreveport, J. W. Peyton 2, 25-23n-2w, 990 ft n and 330 ft w of se c of Sec.; J. W. Peyton 3, 30-23n-11w, 990 ft n and 990 ft e of sw cor of Sec.

CADDO PARISH—Bayou State Oil Corp., Shreveport, Owens 5, 21-22n-15w, 100 ft n and 100 ft e of sw cor E½ of ne sw. Simplex Oil Co., Inc., & T. Taggart Est., Shreveport, Tom Thomas 6, 15-20n-15w, 200 ft n and 660 ft w of se c of ne.

CALCASIEU PARISH—Texas-Gulf Sulphur Co., Vinton, Luther-Moore 9, 19-9s-12w, 1005 ft e and 1850 ft n of sw c of se. Union Sulphur Co., Sulphur, Fee 758, 29-9s-10w, 2270 ft n and 1908 ft w of center of Section.

CAMERON PARISH—Vacuum Oil Co., Houston, Cameron Meadows Ld. Co. 1, 21-14s-13w, 2620 ft and 1960 ft w of ne c of Sec.

MOREHOUSE PARISH—Bahan & Bahan, Shreveport, Feazel 3, 3-20n-4e, 990 ft s and 990 ft of ne cor. of Sec. Natural Gas Prod. Co., Shreveport, Crossett 25, 29-21n-5e, 1444 ft s and 792.85 ft w of ne c of nw.

RICHLAND PARISH — International Gas Prod. Co., Inc., Monroe, Beck B-1, 36-16n-6e, 660 ft s and 713 ft e of nw c of Sec. Palmer Corp., Shreveport, F. N. Boykin A-1, 20-17n-6e, 664 ft n and 660 ft w of se cor. of ne¼. Southern Carbon Co., Monroe, McCoy 1, 16-16n-6e, 1980 ft e and 3300 ft s of ne c of Sec. United Carbon Co., Monroe, D. R. Sartor 1, 11-16n-6e, 3341 ft w and 3960 ft s of ne cor of Sec.

SABINE PARISH—Haynes Bros. Drlg. Co., Shreveport, Mrs. H. S. Meyer 1, 28-8n-12w, 2440 ft s and 1120 ft w of ne cor. of Sec.

ST. MARY PARISH—Empire G & F Co. & Vacuum Oil Co., Houston, Oscar Zenor 1, 21-15s-11e, s 42° 30 ft w, 280 ft from ne cor. of Sec. 21, thence n 47° 30 ft w 270 ft to location.

WEBSTER PARISH—Palmer Corp., Shreveport, R. H. Miller 3, 28-21n-10w, 660 ft n and 660 ft w of se cor. of sw sw.

OKLAHOMA

COTTON COUNTY—Wirt Franklin, et al's School 1, nw, sw sw, 36-1s-10w. Shasta, Dittlefield 1, se, nw, 31-1s-9w. Shasta, Whitehead 2, sw, nw nw ne, 1-2s-10w.

CREEK COUNTY—Pioneer Pet. Co.'s Scott 1a, se, nw, 15-19-9e; Hope 1, ne, sw sw, 6-17-9e. Glenn, Cole et al's, Withers 1, se ne se, 1-14-10e.

GREER COUNTY—Good & Dowell's Cleffell 1, nw, 1-7n-22w.

HARMON COUNTY — Harmon-Tex. Oil Co.'s Headley 1, ne, 17-4n-24w.

JEFFERSON COUNTY—Bridwell Oil Co.'s Spring "C" 1 ,ne, nw sw nw, 25-6e-6w.

LINCOLN COUNTY—Magnolia Pet. Co.'s Staubus 4, sw nw se, 8-14-4e.

MUSKOGEE COUNTY—Bement Oil Co.'s Davis 1, csl se ne, 15-13-16e. Hale & Reynold's Welch 1, c sw nw se, 1-13-18e. E. Mills et al's Jordan 4, se, 14-13-18e. L. R. Kershaw's Fee 1, sw, se se, 15-13-18e.

OKFUSKEE COUNTY — Burke-Greis Oil Co.'s Grayson 1, nw se, 32-12-10e.

OKLAHOMA COUNTY—I T I O Co. et al's Farley 1, sw nw sw, 24-11-3w; Warden 1, nw sw, 24-11-3w; Werner Farley 2, se ne se, 23-11-3w.

OKMULGEE COUNTY—J. H. Rebold's Scott 2, ne nw se, 6-15-13e.

PONTOTOC COUNTY—Dixie Oil Co.'s Haynes 2, ne nw sw, 32-5-5e.

POTTAWATOMIE COUNTY — Eason Oil Co.'s Townlot 1, ne sw se nw, 8-9-5e. Superior et al's Alford 1, ne se ne, 7-9-5e. Magnolia's Billington 7, sw ne nw, 22-7-4e. Magnolia's Billington 6, se ne nw, 22-7-4e.

SEMINOLE COUNTY—Carter's Killing 13, c n½ nw, 23-9-6e. I T I O Co.'s Johnson 1, nw se ne, 24-7-6e. Magnolia's Cudjo 3, sw ne ne, 24-7-6e. Gypsy's Smith 2, nw, 18-6-8e.

STEPHENS COUNTY—Pace et al's Bristowe 5, nw sw nw sw, 18-2s-7w.

TULSA COUNTY—Bryan Pet.'s Rothammer 1a, se sw sw, 1-16-15e.

WAGONER COUNTY—Hale-Ford Oil Co.'s Brown 5, sw se nw, 36-16-17e.

KANSAS

BUTLER COUNTY—Alladin Pet. Co.'s Our 1, (owdd) ne se, 20-26-7e.

CHASE COUNTY—Steinbushel et al's Cook 1, ne, lot 27, 31-19-8e.

COWLEY COUNTY—Wakefield et al's Osborn 2, se sw ne, 18-30-5e. Arkansas Fuel Oil Co.'s Biddle 1, c sw ne, 7-32-5e.

GREENWOOD COUNTY—Simmons & Rhodes, Patterson 5, ne sw sw, 22-23-11e.

McPHERSON COUNTY—Milmack, et al's Decker 1a, nw, 11-20-3w. Derby, Stuckey 2, nw ne se, 9-21-3w.

SEDGWICK COUNTY—Shell Pet.'s Borg 1, (owdd) nw ne sw, 14-26-2e. Shell Pet. et al's Tripp 1, ne sw, 22-26-2e.

SUMNER COUNTY—Dickey et al's Kratz 3, sw nw, 26-34-2e, (twin).

CALIFORNIA

ELWOOD — Elwood Exploration Co.'s Elwood 2, 22-4-29.

HUNTINGTON BEACH — Richfield Oil Co.'s Dieter-Golay 2, 2-6-11.

LONG BEACH—Dabney-Johnson Oil Corp's No. 52, 29-4-12. Carter Pet. Co.' Ltd.'s No. 1, 24-4-13. Dabney-Johnson Oil Corp.'s No. 51, 29-4-12. E. J. Preston's No. 31, 24-4-13.

SAN BERBARDINO COUNTY—John W. Sherman et al's No. 1, 33-2-8.

SANTA BARBARA COUNTY—General Pet. Corp.'s Sands 1, 21-4-28; Crandall 1, 21-4-28; James 1, 21-4-28; Parker 1, 21-4-28. Standard Oil Co.'s Shepard 1, 26-4-25. United States Pet. Co.'s No. 1, 20-4-28. R. C. Foerster and C. C. Kreis's No. 1, 20-4-28. J. F. Shuman and W. T. Fitzgerald's No. 1, 20-4-28. Continental Oil Co.'s No. 124-1, 33-4-25.

PIRU—E. A. Fennell Co.' Inc's No. 1-F, 13-4-19.

SUMMERLAND — George F. Getty, Inc.'s State Lease 16-11, 21-4-26.

SUNSET—North American Oil Con.'s Kerckhoff 6, 8-11-23; Kerckho¾ 4, 8-11-23; Sunset 8, 8-11-23.

TEXAS

ARCHER COUNTY—Ray Dawson, Oklahoma City, H. Kolb, 120, 1, S 116, Club Ranch sur, 300 ft from s and e lines. Primrose Refg. Co., Wichita Falls, J. A. Kunkel, 40, 3, B 4, T. McCoy sur, 300 ft e of No. 2. F. C. Grebin, Wichita Falls, W. M. Easterling, B 20, 1, B 20, Meade sur, 150 ft from n and w lines. L. T. Burns, Wichita Falls, H. F. Harmel, 40, 1, L. M. Meade sur, 150 ft from s and w lines of blk 25. J. H. Turbeville, 160, 8A, B 152, R. Carson sur, 300 ft w of No. 6. C. B. Long, 40, 10A, S. P. Ry sur, 300 ft e of No. 4. M. L. Richards, Wichita Falls, J. A. Young, 40, 1, 2426, TE&L sur, 150 ft from n and e lines of sec¼ of se¼; 2, same sur, 150 ft from s and e lines of sec. W. R. Duke, Wichita Falls, W. T. Richardson, 80, 3, 2425, TE&L sur, 300 ft s of No. 2, Pandem Oil Corp., Wichita Falls, J. A. Young, 40, 3, 2426, TE&L sur, 150 ft from n and 450 ft from e line se¼; 4, same sur, 150 ft from s and e lines of ne¼ of se¼. Continental Oil Co. & Cullum, Wichita Falls, F.C.S.L., 100, 4 B 9, F. C. S. L. sur, 300 ft s of No. 3. E. B. Lawson, Vernon, Texas, W. T. Richardson, 80, 4, 2425, TE&L sur, 150 ft from s and w lines. M. Wilson, 195, 2, J. W. Scott sur, 2697 ft from n and 2136 ft from w line sur. Hedrick-Camp Drlg. Co., Wichita Falls, T. B. Wilson, 57, 2, B. Howard sur, 150 ft from w and 450 ft from s line. Sun Oil Co., Dallas, W. T. Richardson, 100, 10, TE&L sur, Wilson & Wilson, Wichita Falls, J. T. Richardson, 60, 1, J. Scott sur, 810 ft from n and 150 ft from e line of blk 12. Roy I. Carter, Wichita Falls, J. A. Young, 30- 1, 2426, TE&L sur, 150 ft from s and e lines. E. B. Madden, Olney, W. H. Porterwood, 40, 1, 2411, TE&L sur, 150 ft from n and w lines of sec. L. T. Burns, Wichita Falls, M. M. Dubose, 140, 1, G. P. Meade sur, 1170 ft from e and 750 ft from n line of blk 10. Panhandle Refg. Co., Wichita Falls, H. O. Prideaux, 53, E12, A. McMullen sur, 150 ft from n and w lines of sur. Douglas Oil Co., Wichita Falls, W. J. McClure, 67, 1B, B 13, Crawford sur, 450 ft from n and 150 ft from w line.

BROWN COUNTY—A. E. Metts, Bangs, C. G. Hunt, 100, 1, S 11, D. W. Wooten sur, 150 ft from s and e lines.

BRAZORIA COUNTY—Cullen & West, Houston, T. Smith, 80, 2, C. F. Patton sur, 75 ft from n and 500 ft from w line.

CALLAHAN COUNTY—Ewmo Oil Corp., Abilene, A. W. Beasley, 80, 10, S 25, D&D Asy sur, 300 ft w of No. 9, in se¼. L. G. Bradstreet Co., Fort Worth, J. L. Cavanaugh, 51 B4, B 98, C.C.S.L. sur, 200 ft from w and 150 ft from s line. Moutray Oil Corp., Abilene, A. Hickman, 445, 55, S 149, BBB&C sur, 300 ft ne of No. 36. Ewmo Oil Corp., Abilene, A. W. Beasley, 80, 9, S 25, D&D Asy sur, 300 ft w of No. 6 in se¼. E. Lilius, Abilene, W. D. Clinton, 40, 1, s 4, M. Cherry sur, 500 ft from n and e lines of ne¼ of se¼. Cisco Oil Co., Cisco, W. E. Pruett, 110, 27, 2278, TE&L sur, 300 ft n of No. 10; 26, same sur, 300 ft ne of No. 17. W. F. Powell, Moran, W. A. Morgan, 60, 1, S 125, Univ. Lands sur, 350 ft from n and w lines. Kuhlemeier-Kleiner Co., Cisco, W. E. Pruett, 40, 9, 2278, TE&L sur, 450 ft from s and e lines. Texas Co., Cisco, W. M. George, 108, 1, S 76, Bayland Asy. sur, 989 ft from n and 250 ft from e line of sec.

COLEMAN COUNTY—Eastland Oil Co., Fort Worth, W. J. Crowder, 40, A1, No. 483, J. H. Wood sur, 126 ft from n and 150 ft from e lines.

COOKE COUNTY—Fain-McGaha Oil Corp., Wichita Falls, J. B. Wells, 2, J. Wilcox sur, 2158 ft from w and 150 ft from s line of sur. W. A. Graves, Fort Worth, J. Carpenter, 102, 1, R. Warner sur, 150 ft from n and 450 ft from e line. J. Ables, 880, 1, J. H. Jossey sur, 1950 ft from n and 1350 ft from e line.

CARSON COUNTY—Danciger O. & R. Co., Fort Worth, Moore, 80, 4, S 125, B 4, I&GN

Quality that begins in the steel

The name "Bethlehem" marked at intervals on every length is assurance to you that Bethlehem Steel Pipe embodies the same high quality found in other Bethlehem Products.

A vital factor in the high quality of Bethlehem Steel Pipe is the steel used in its manufacture, which is made especially for this purpose, under the supervision of skilled metallurgists.

Not only steel of the most suitable grade, but modern methods of manufacture enter into the making of Bethlehem Steel Pipe. From the mining of the ore, through the finishing operations, the manufacture of Bethlehem Steel Pipe is controlled by one organization. Each step in the conversion of the steel into pipe is carried out by thoroughly experienced men. The tests and inspections are most critical, so as to make certain that each length of pipe conforms in every way to the Bethlehem Standard of quality.

When you purchase Bethlehem Steel Pipe, you are assured of pipe of uniformly high quality — pipe that meets every test.

BETHLEHEM STEEL COMPANY

General Offices: BETHLEHEM, PA.

District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Detroit, Cincinnati, Chicago, St. Louis, San Francisco, Los Angeles, Seattle, Portland, Honolulu.

Bethlehem Steel Export Corp., 25 Broadway, New York City
Sole Exporters of our Commercial Products

BETHLEHEM STEEL PIPE

Bethlehem maintains at Los Angeles, California, and at Houston, Texas, well assorted stocks of line pipe, ready for immediate shipment. Both threaded and coupled and plain-end pipe are included in these stocks.

sur, 330 ft from s and w lines of w½ of se ¼.

CLAY COUNTY—Merrick & Goldsmith, Wichita Falls, Byers, 80, 3, B 15, Byers sur, 300 ft s of No. 2.

CRANE COUNTY—Simms Oil Co., Dallas, Univ. A, 160, 11, S 39, Blk 30, 330 ft from w and 990 ft from n line se¼.

CHAMBERS COUNTY—Sinclair, Houston, J. Wilburn, 52, 3, H. Griffith sur, 100 ft ne of No. 4; 4, same sur, 1586 ft from w and 48 ft from n line.

EASTLAND COUNTY—Marro Bros., Ranger, L. Williams, 40, 1, W. Frell sur, 300 ft from s and 333 ft from w line. Harbin, Heflin e al, Eastland, W. Harbin, 30, 1, S 15, B 2, H&TC sur, 150 ft from n and w lines of nw¼ of nw¼. Southern Oil Prod. Co. & Prairie O. & G. Co., Eastland, P. F. Turner, 80, 1, S 16, B 2, H&TC sur, 450 ft from n and e lines of ne¼ of ne¼. J. L. Elliott, Fort Worth, P. Martin, 60, 1, S 52, B 4, H&TC sur, 632 ft from n and 491 ft from w line. Humble, Cisco, E. A. Whitesides, 1, J. Rubarth sur, 2711 ft from n and 1330 ft from w line.

FORT BEND COUNTY—Humble, Houston, Bankers Mtge., B 2, Wm. Little sur, 332 ft from s and 474 ft from w line.

FALLS COUNTY—Jno. T. Callahan, Waco, W. Scott, 117, A2, J. A. Manchaca sur, 880 ft from s and e lines.

GUADALUPE COUNTY — Stroube & Stroube, Corsicana, R. Miller, 8, 1, J. B. Alexander sur, 150 ft from n and e lines; 2, same sur, 150 ft s of No. 1; 3, same sur, 150 ft s of No. 2; 4, same sur, 150 ft s of No. 3. Texas Co., Houston, H. Willie, 73, 1, J. C. Darst sur, 750 ft from s and 150 ft from w line. D. Wilson, 40, 4, J. C. Darst sur, 766 ft from w and 150 ft from s line. Magnolia, Dallas, T. Dix, 50, 4, J. W. Robinson sur, 300 ft sw of No. 1; 5, same sur, 60 ft ne of No. 2. Gulf Prod. Co., Houston, Dix, 81, 1, J. B. Robinson sur, 417 ft from w and 150 ft from n line.

GRAY COUNTY—W. L. Stover, Pampa, G. N. Saunders, 100, 1, S 3, B&P sur, 330 ft from s and e lines of w¼ of nw¼. McKee, Teary Oil Co. et al, Amarillo, W. E. Archer, 160, 4, s 39, B 3, I&GN sur, 330 ft from n and w lines of ne¼. Dixon Creek Oil Co., Amarillo, W. W. Harrah, 40, 2, S 50, B 3, I&GN sur, nw cor or se¼ of ne¼.

HARRIS COUNTY—South Texas Pet. Co., Houston, N. Lee, 80, 2, E. Ruhle sur, 500 ft s of No. 1. Moody Corp., Houston, K. F. Whitehead, A 17, 3, No. 51, J. Hamilton sur, 900 ft from s and 120 ft from w line. Martin, Drake & Jones, Houston, W. Pickens, 6, 1, J. B. Stevenson sur, 100 ft from n and 50 ft from e line. Geo. Harvey, 986, 1, T. Patching sur, 600 ft from w and 3000 ft from s line.

HOWARD COUNTY — Humble, Wichita Falls, H. R. Clay, 320, 9, S 139, B 29, W&NW sur, 330 ft from n and e lines of w½ of sec; 10, same sur, 660 ft w of No. 8. Merrick & Bristow, Ardmore, Okla., D. Roberts, 80, 11, S 137, B 29, W&NW sur, 450 ft from e and 870 ft from s line s½ sw¼. Ward Oil Corp., Ardmore, Okla., D. Roberts, 80, 23, S 137, B 29, W&NW sur, 855 ft from n and 330 ft from e line n½ sw¼.

HOOD COUNTY—Standard Oil Co., Fort Worth, D. C. Cogdell, 2000, 1, T. Robinson sur, 300 ft sw of center of ne line.

HUTCHINSON COUNTY — Phillips Pet. Corp., Bartlesville, Okla., F. W. Hood, 80, 1, S 68, B 46, H&TC sur, 400 ft from n and 369 ft from e line nw¼n½s½. E. R. Mayer, 160, 1, S 37, B y, A&B sur, 990 ft from n and w lines of ne¼.

JACK COUNTY—Saxet Oil Co., Wichita Falls, S. E. Maxey, 40, 1, Sec. 2, 150 ft from n and w lines. Golding & Cochran, Wichita Falls, E. E. Garner, 120, 1, E. Smith sur, 450 ft from n and 150 ft from e line. Shaw Oil Co., Wichita Falls, J. M. Box, 62, 5, I, Hughson sur, 270 from s and 160 ft from w line. S. A. Hopkins, Cisco, J. C. Riggs, 160, 1, Wm. Matthews sur, 300 ft from s and 800 ft from w line. Peery, Woody & Boller, Wichita Falls, J. A. Raley, 100, 3, I. Hugson sur, 320 ft from w and 1669 ft from s line. Shaw Oil Co., Wichita Falls, J. M. Box, 62, 6, I. Hugson sur, 593 ft from s and 150 ft from e line.

JIM HOGG COUNTY—Chas. B. Stevens, Laredo, M. Garza, 40, 2, S 40, B. 12, 850 ft from nw and 150 ft from ne line.

JONES COUNTY—W. G. Clark, Abilene, A. Newman, 60, 2 S 52, B 18, T&P sur, 1000 ft w of No. 1.

LIBERTY COUNTY—Cranfill & Reynolds, Houston, Esperson, 6, C. W. Fisher sur, 50 ft from w and 3250 ft from s line.

MONTAGUE COUNTY—Seitz, Comegys & Seitz, Inc., Wichita Falls, E. W. Lewis, 72, 1, J. Short sur, 500 ft from s and e lines.

PECOS COUNTY — Humble, San Angelo, M. A. Smith, A, 640, 13, S 36, B 194, GC&SF sur, 760 ft s of No. 12. J. R. Miller et al, Fort Stockton, J. R. Pennett, 160, 1, B 119, S 8, GC&SF sur, 330 ft from e and 575 ft from s line. Geyer, Frates, Inc., San Angelo, White, 160, S 29, Blk. Z, TC Ry sur, 330 ft from s and w lines of ne¼. Taylor-Link Oil Co., San Angelo, Univ. 80, 12, S 13, B 18, 1650 ft from e and 990 ft from s line; 13, same sur, 2310 ft from e line. and 990 ft from s line; 14, same sur, 2310 ft from e line and 1650 ft from s line.

REFUGIO COUNTY—W. L. Pearson, Corpus Christi, C. E. Heard, 2, 1, Refugio sur, center of Blk 27. Houston Oil Co., Houston, F. B. Rooke, H1, Refugio sur, 166 ft from s and e lines of Blk. 48.

SHACKELFORD COUNTY — Fred Pool, Moran, J. B. Matthews, 40, 1, S 29, B 1, E.T. Ry sur, 450 ft from w and 150 ft from s line. O. P. Deaner, Abilene, Bowman, 80, 1, S 89, B 12, T&P sur, 150 ft from s and e lines of e½ of se¼. Warren, Klinger et al, Albany, W. E. Muse, 11, 1, S 1, Blind Asy. sur, 150 ft from s and e lines. Frizzell & Smalley, Albany, F. W. Alexander, 80, 1, 580, TE&L sur, 150 ft from n and 1050 ft from s line se¼ of se¼; 2, same sur, 300 ft sw of No. 1. H. W. English, Fort Worth, D. G. Huber, 80, 1, S 21, Blind Asy. sur, 150 ft from n and 450 ft from w line n½ sw¼. W. H. Rittenbusch, San Angelo, J. H. Nail, 160, 2, S 40, E.T. Ry sur, 150 ft from n and w lines of nw¼. Big State Oil Corp., Dallas, Russ Webb, 160, 15, S 27, B 11, T&P sur, 600 ft from n and 750 ft from e line. Cranfill & Reynolds, Cisco, J. B. Matthews, 2, S 31, E. T. Ry sur, 150 ft from s and e lines of nw¼. Johnson & Holland, Dallas, J. L. Barstow, 4, 1, S 20, B 11, T&P sur, 150 ft from n and e lines of blk 1. Dyass & Hatcher, Albany, Nixon, 5, 1, Sec. 2, Blind Asy. sur, 120 ft from n and 150 ft from e line. Midwest Exploration Co., Amarillo, J. F. Dyer, 80, 6, S 85, B 12, T&P sur, 450 ft from e and 150 ft from n line e½ of ne¼. Hart & Gist et al, Albany, Clarke, 40, 5, S 2, Blind Asy. sur, 150 ft from s and w lines of nw¼ of ne¼.

SMITH COUNTY—Mid-Kansas O. & G. Co., Shreveport, La., J. Overton, 15, 1, J. Miller sur, 200 ft from w and 160 ft from s line. G. P. Jones, 136, 1, S. Brimberry sur, 407 ft from e and 160 ft from s line. R. H. Davis, Cameron, J. N. Starnes, 1, J. W. Allen sur, 600 ft from n and 150 ft from w line.

THROCKMORTON COUNTY—Less Combest et al, Mineral Wells, J. T. Odell, 80, 2 S 695, TE&L sur, 1094 ft from n and 150 ft from e line sec. K. Leathers, 80, 1, S 934, TE&L sur, 1716 ft from e and 150 ft from s line sec. Kisk Oil Co., Wichita Falls, U C S L, 40, 1, U C S L sur, 150 ft from s and w lines of blk 26. Geo. Mollenkopf, Woodson, J. E. Hughes, 20, 2, 902, TE&L sur, 300 ft s of No. 1. J. A. Bearman et al, Cisco, Ledbetter, 40, 4B, S 2, S.P. Ry sur, 295 ft from sw and 650 ft from se line. Wilson & Swain, Moran, J. T. Odell, 1, 696, TE&L sur, 150 ft from s and w lines. Cranfill & Reynolds, Dallas, R. P. Lee, 6, S 198, BBB&C sur, 150 ft from e and 160 ft from s line sw¼ of ne¼.

UPTON COUNTY—Gulf Prod. Co., Fort Worth, J. T. McElroy, 619, 72, S 200, B F, CCSD&RGN sur, 660 ft e of No. 65; 72, S 201, Blk. F, 610 ft w of No. 70. Humble O. & R. Co., Wichita Falls, R. P. Ricker, 14, M. S. Denton No. 5 sur, 3280 ft from nw and 4290 ft from ne line section.

WICHITA COUNTY—Arkansas Fuel Co., Wichita Falls, Kemp & Kemper, B 48, 39B, S 82, W.V.F.L. sur, 450 ft from n and 150 ft from e line; 40B, same sur, 200 ft from n and 150 ft from e line. Bridwell Oil Co., Wichita Falls, J. M. McFall, 40, 1, H. B. Balch sur, 150 ft from s and w lines. W. H. Hammon, Wichita Falls, Fassett, 38, 1, J. Johnson sur, 175 ft from s and 150 ft from w line of sur. Grayce Oil Co., Wichita Falls, Kemp & Kempner, A, 4, 21, S 21, B 45, WVFL sur, 150 ft from n and w lines. Fresno Oil Co., Wichita Falls, W. N. Dodson, 20, 11, C. Winters sur, 300 ft n of No. 9. W. B. Hamilton, Wichita Falls, M. M. Robinson, 80, 1, Wag. Col. sur, 150 ft from w and 500 ft from s line Blk 321. A. Volkart, 40, 1, Wag. Col. sur, Blk 309, 479 ft from n and 150 ft from w line ne¼. A. Volkart, 40, 1, Wag. Col. sur, Blk. 302, 450 ft from n and 150 ft from w line ne¼. Texas Co., Wichita Falls, W. T. Waggoner, A373, S 148, H&TC sur, 625 ft e of No. 253. Mogren & Anderson, Electra, E. E. Goetze, 111, 21, SA&MG sur, 150 ft from w and 450 ft from s line. Culbertson Co., Wichita Falls, J&J Waggoner, 465, 66, S 13, BS&F sur, 335 ft from n and 1330 ft from e line. A. R. Lundell, Fort Worth, Vernon Oil Co., 40, 2, S 1, SA&MG sur, 450 ft from e and 500 ft from s line. W. H. Howell, Wichita Falls, Foster-Allen, 20, 1, HT&B sur, 150 ft from s and w lines.

WILBARGER COUNTY—L. G. Bradstreet Co., Fort Worth, W. T. Waggoner, 240, G1, S 17, B 5, H&TC sur, ne cor of sw¼. Empire G. & F. Co., Wichita Falls, W. T. Waggoner, 160, 30B, S 32, B 4, H&TC sur, 323 ft from s and 662 ft from w line sec. W. T. Waggoner, 160, 19C, S 25, B 4, H&TC sur, 530 ft from e and 670 ft from s line nw¼. C. P. Burton, Wichita Falls, W. T. Waggoner, G, 40, 1A, S 18, B 4, H&TC sur, 170 ft from e and 150 ft from s line nw¼ne¼. Grayback Dev. Corp., Wichita Falls, W. T. Waggoner, 20, 2, S 50, B 2, H&TC sur, 300 ft nw of No. 1. W. T. Waggoner, 200, 1, S 52, B 2, H&TC sur, 150 ft from e and 450 ft from s line. Empire G. & F. Co., Wichita Falls, W. T. Waggoner, 160, 31B, S 32, B 4, H&TC sur, 275 ft from n and 763 ft from w line sw¼; 32B, same sur, 220 ft from w and 280 ft from s line ne¼sw¼.

WARD COUNTY—Sturm & Paine, Midland, A. D. Cummings, 50, 1, S 7, B 32, H&TC sur, 160 ft from n and e lines. Alpine Oil & Dev. Co., Alpine, R. R. Dakan, 10, 1, S 11, B 5, H&TC sur, 2026 ft from sw and 854 ft from se line sec.

WHEELER COUNTY—Edwards, Ramming, Shamrock, J. D. Cates, 40, 1, S 73, B 23, H&GN sur, center of nw¼ of ne¼.

WILSON COUNTY — Rycade Oil Corp., Houston, G. Hice, 79-1, J. Delgado sur, 150 ft from se and 600 ft from ne line.

WISE COUNTY — C. Rosenfield, Fort Worth, E. G. Graves, 40, 1, B 15, SCSL sur, se cor of sw¼.

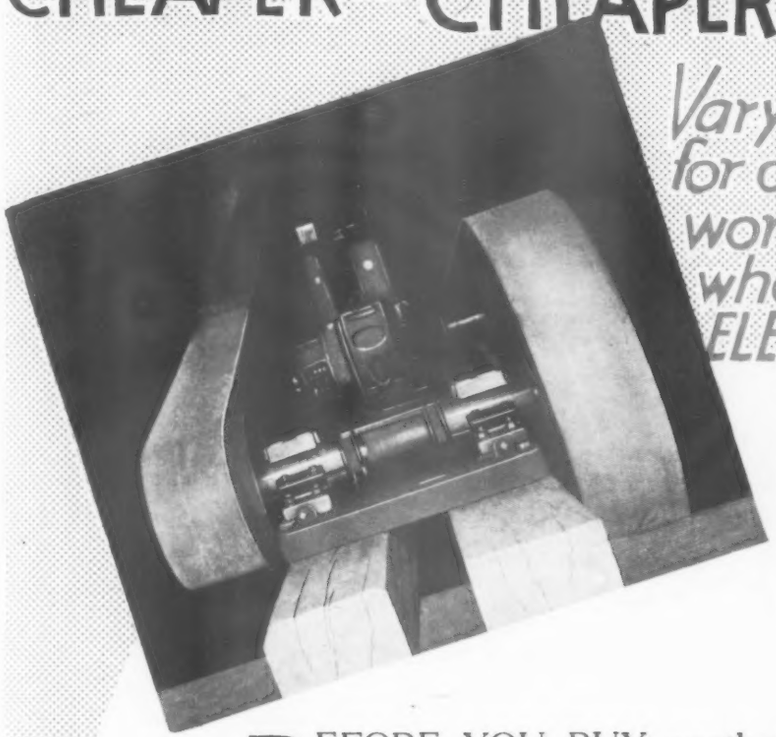
YOUNG COUNTY—Wooten & Reed, Graham, B. Fisher, 57, 1, W. H. Lemmon sur, 450 ft from w and 150 ft from s line. A. C. Casey, 33, 1, 1905, TE&L sur, 150 ft from s and e lines. Richardson Trust Co. & Dresser, Markley, F. M. Cullers, 80, 5, B 19, YCSL sur, 300 ft ne of No. 4. C. B. Long, Wichita Falls, H. Hausler, 130, 1, J. Poitevent sur, 450 ft from n and 150 ft from s line sw cor L 2. E. R. Riggs, Olney, S. J. Allison, 89, 4, 150, TE&L sur, 300 ft e of No. 1. O. Brachter, Loving, F. M. Cullers, 40, 4, G. N. Stinnett sur, 300 ft s of No. 1. Panhandle Refg. Co., Wichita Falls, N. Prideaux, 100, D7, I&GN sur, 300 ft s of No. 2. Sun Oil Co., Dallas, O. Deitrich, 114, 15, S 4, BBB&C sur.; 16, same sur; 17, same sur. King Royalty Co., Wichita Falls, H. O. Kunkel, 39, 9, G. W. Stell sur, 450 ft from s and w lines. Martin & Cochran, Wichita Falls, J. M. Smith, 56, 2, 634, TE&L sur, 150 ft from s and 1866 ft from w line. Petroleum Prod. Co., Wichita Falls, H. Hennig, 40, 9, TE&L sur, 450 ft from w and 150 ft from s line. Bolin Tool Co., Graham, D. L. Wolf, 30, 6, 165, TE&L sur, 150 ft from n and e lines. D. L. Wolf, 30, 1, 165, TE&L sur, 150 ft from n and w lines. F. E. Butler et al, Olney, W. R. Farmer, 80, 1, Jno. Anderson sur, 150 ft e of center of w line. D. L. Wolf, Olney, H. N. Tucker, 42, 1, 180, TE&L sur, 150 ft from n and 450 ft from w line. Perkins-Cullum, Wichita Falls, E. Deitrich, 45, 4, G. W. Stell sur, 300 ft c of No. 3. H. B. Alexander et al, Loving, L. R. Drum, 20, 1, S. Tynes sur, 150 ft from n and e lines. E. B. Madden, Olney, J. O. Winkler, 40, 1, I Holman sur, 150 ft from s and e lines. Panhandle Refg. Co., Wichita Falls, N. Prideaux, 100, D6, I&GN sur, 1840 ft from s and 1750 ft from w line sec. Long & Wolf, Fort Worth, R. M. Williams, 60, 1, R. O. Woolfork sur, 454 ft from ne and 153 ft from se line. Gorsuch Oil Co., Abilene, O. W. Matthews, 80, 3, A. Rohus sur, 150 ft from w and 450 ft from s line.

ZAPATA COUNTY—Jno. G. Morris, Laredo, F. G. Martinez, 160, 1, No. 6 sur, 500 ft from n and w lines of sw¼. O. W. Killam, Laredo, R. B. Cuellar, 261, 19, J. M. Pereda sur, 418 ft from nw and 150 ft from ne line.

ZAVALLA COUNTY—Texas Fuel Gas Co., San Antonio, West, 700, 4, Sec. 44, 1000 ft from w and 25 ft from s line.

SERVING WEST TEXAS

WITH EVERY PASSING YEAR ELECTRIC RATES ARE STEADILY GROWING CHEAPER AND CHEAPER AND CHEAPER



Varying market prices for oil or gas never worry the operator who has installed ELECTRIC EQUIPMENT

Let Our Engineers give an accurate estimate on the cost of converting YOUR EQUIPMENT, to Electric Power.

BEFORE YOU BUY another piece of new power equipment, let one of our experienced Engineers help you figure the operating costs required with the various types of power available in your field.

ELECTRIC POWER is dependable—ready to start or stop at the throw of a switch, day or night—with less wear and tear on machine—with minimum fire hazard—and with rates that never change, except to become lower.

Our Engineers have been pioneers in "electrifying the oil fields"—and will gladly show you operating figures which PROVE that electricity is the cheapest oil field power.

WEST TEXAS UTILITIES COMPANY
In the Land of Opportunity
GENERAL OFFICES
ABILENE, TEXAS

WILDCATS FROM ALL SECTIONS

WEST TEXAS
Completions

Company, Well and Location	Initial Production Bbls.	Depth
JONES COUNTY—		
Cranfill-Reynolds Co. & California Co., Stephens 1	*	2836
PECOS COUNTY—		
M. M. Rowan et al, Sherbino 1	*	2497
The Texas Co. et al, C. Graef 1	*	1755
REAGAN COUNTY—		
G. A. Henshaw-Thomas-Brann, Hughes 1	*	3020
REEVES COUNTY—		
Southern Crude Oil Pur. Co., Kloh 1-A	*	5216
SUTTON COUNTY—		
Independent O&G Co. & Sun Oil Co., Allison 1	*	4315
TAYLOR COUNTY—		
Adams-Ferguson & Hobbs, Lowe 1	125	2390

ANDREWS COUNTY—Deep Rock Oil Co. Unit Plan's Ogden 1, elev 3206 ft, top salt 1750 ft, top lime 4050 ft, flowing 200 bbls oil, little water daily, 4345-4428 ft.

BORDEN COUNTY — W. A. Moncrief & Humble's Munger 1, elev 2433 ft, top salt 1090 ft, dr by junk 2465 ft.

BREWSTER COUNTY—Ed. W. Bateman & Co.'s Neville 1-A, dr 2620 ft. E. L. Chapman et al's Skinner 2, sd 950 ft. Grastorf et al's Redfield 1, sd 320 ft.

COCHRAN COUNTY—R. A. Westbrook & Co.'s Slaughter 1, elev 2347 ft, top lime 2768 ft, dr 3050 ft.

COKE COUNTY—Mid-Kansas O&G Co.'s Lackey 1, elev 2152 ft, pb from 4255 to 3770 ft.

CROCKETT COUNTY — California Co.'s Shannon 1, elev 2684 ft, top salt 1110 ft, top lime 2440 ft, cem cas 2450 ft. Cushing Gasoline & Ref. Co.'s Powell 3, top salt 1030 ft, dr 2435 ft. Empire Gas & Fuel Co.'s Shannon 1, elev 2691 ft, top salt 1130 ft, set cas 2470 ft. Lewis et al's Pecos 1, sd 1400 ft. Magnolia Pet. Co.'s Hoover 1, dr 110 ft. Texas Pacific Coal & Oil Co.'s Shannon 1, elev 2593 ft, top salt 1030 ft, dry hole 3580 ft.

CULBERSON COUNTY — Grisham-Hunter Corp.'s Fee 1, elev 3579 ft, top Deleware lime 2607 ft, dr 3165 ft; Seay 1, sd 840 ft.

ECTOR COUNTY—Cosden Oil Co.'s University 1-A, elev 2914 ft, top salt 1055 ft, dr 1750 ft; University 1-B, elev 2890 ft, top salt 1095 ft, dr 2700 ft. Humble-Penn & Atlantic's J. S. York 1, elev 2921 ft, top salt 1240 ft, top lime 3410 ft, flowing 20 bbls oil per hour from lime 3755-71 ft. Landreth Prod. Corp.'s University 1-S, elev 2894 ft, top salt 1080 ft, top lime 3115 ft, cem cas 3346 ft; University 1-T, elev 2871 ft, top salt 1215 ft, dr 2615 ft. Llano Oil Co. et al's T. S. Hogan 1, dr 220 ft.

EL PASO COUNTY—Inter-Coastal Oil Co.'s Malone 1, sd 1481 ft.

FISHER COUNTY—Cranfill-Reynolds Co.'s Bledsoe 1, elev 1798 ft, dr 2930 ft. Magnolia Pet. Co.'s Lee 1, elev 1827 ft, dr blue shale 4065 ft. Mid-Kansas O&G Co. & Phillips Pet. Co.'s Stephenson 1-A, top lime 3228 ft, dr 3885 ft. Roeser-Pendleton, Inc., & Amerada's Waco Bank 1, elev 1779 ft, fsh 3161 ft.

GAINES COUNTY—Cranfill-Reynolds & La. Oil Ref. Corp.'s B. B. Ralph 1, elev 3475 ft, top salt 1657 ft, dr 1960 ft.

GARZA COUNTY—H. C. Cate & Pandem Oil Corp.'s Stoker 1, elev 2452 ft, top salt 810 ft, top lime 2255 ft, pb from water at 3018 ft to shoot show oil 2908-18 ft.

GLASSCOCK COUNTY — Amerada Pet. Corp.'s Coffee 1, elev 2596 ft, top lime 2058 ft, dr 2085 ft. California Co.'s Currie 3, elev 2664 ft, coring lime 3075 ft; Jones 1, dk. Glasscock Bros. et al's Edwards 1, elev 2548 ft, top lime 2155 ft, pump 105 bbls 15 per cent water 2276-99 ft. Kirby Pet. Co. et al's Baker 2, top pay 2160 and 2220-30 ft, sd 2281 ft; Baker 3, dr 1010 ft. Lion Oil Ref. Co.'s Coffee 3, top pay 2165-75 ft, dr with 1500 ft oil in hole 2250 ft. Simms Oil Co.'s Coffee 2, dr 1605 ft. Ed. Timberlake & M. Snyder's Meek 1, dr 1310 ft. World Oil Co.'s McDowell 2-C, elev 2543 ft, dr 1980 ft.

TOM GREEN COUNTY—J. E. Ellis et al's Geo. W. Lewis 1, set cas to test show oil 337-51 ft. D. A. Smith-Fitzgerald's Bennett 1, bad hole 2447 ft. Fuhrman Pet. Corp.'s Wardlaw 1, dr 1345 ft. D. W. Wiley et al's Abe Mayer 1, sd 250 ft.

HOCKLEY COUNTY — World Oil Co.'s Ellwood 1, elev 3363 ft, top salt 2127 ft, sd 4320 ft.

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports; *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

South Dakota's First Oil Well Makes 25 Barrels

Hot Springs, S. D.—Black Hills Petroleum Company has what looks like a commercial well, the first in South Dakota, on the Barker dome structure, NW Section 34-6s-2e, about 27 miles northwest of this city. The hole is bottomed at 1328 feet in what is believed to be the base of the Minnelusa, or the top of the Madison formation. The pay sand has been penetrated 6½ feet, and the hole fiilled with 450 feet of lively black oil testing 38.5 Baume. Drilling has been suspended to permit running a string of casing to shut off about two barrels of water per day, coming from around 1200 feet. There is considerable gas with the oil, but not enough to make it flow. Some gas is found at 1170 feet which was not inflammable. As soon as casing has been set the well will be drilled deeper and tested for production. At the present depth it is believed that the well is good for 25 to 50 barrels per day.

The structure was mapped by Orville E. Rhinehart of Newcastle, Wyoming, and checked by Charles T. Lupton of Denver who also spotted the location. Many scouts representing major oil producing companies in the Rocky Mountain region are in Hot Springs watching the development on Barker dome, and also several other wells drilling in southwestern South Dakota.

Houston.—Golf Crest Oil Company has abandoned its wildcat test, Golf Crest Country Club 1, located just outside of the Houston city limits to the south. Depth of the hole was 2562 feet. Location of the test was in the B. Prentiss Survey.

HUDSPETH COUNTY — California Co.'s University 1, elev 5833 ft, dr 2870 ft.

IRION COUNTY — Atlantic & Beasley's Sawyer 1, top salt 810 ft, dr 1065 ft. J. B. Crawford et al's Nutt 1, sd 1105 ft. Carl Cromwell et al's Fuller 1-A, dr 580 ft. Irion Oil Co.'s Tankersley 1-A, sd 200 ft. Kingwood Oil Co. et al's Sugg 1, elev 2334 ft, pb from water at 7818 ft for two shots, but no results. J. A. Starkweather (Concho Oil Co.'s) Lindley 1, sd hfw 1475 ft. P. H. Williams et al's Ashe 1, dr 6615 ft.

JONES COUNTY — Continental Oil Co.'s Phillips 1, cem cas 2239 ft. Mid-Tex O&G Co.'s King 1, sd 1560 ft; Minter 1, elev 1719 ft, sd hfw 2359-61 ft. F. E. Shaheen et al's King 1, elev 1629 ft, sd 2176 ft.

KENT COUNTY — Atlantic Oil Prod. Co. Unit Plan's Wallace 1, top salt 330 ft, dr 1490 ft.

LOVING COUNTY—Humble O&R Co. Unit Plan's Kloh 1-C, elev 2814 ft, top salt 1230 ft, dr by junk, td 3650 ft. Independent O&G Co.'s Wheat 1, elev 2735 ft, dr 4145 ft. Lockhart & Co.'s Lepp 2, rig; Wheat 1-H, elev 2713 ft, top Deleware 4152 ft, top black lime 5025 ft, fsh cas 5040 ft.

LYNN COUNTY—Hart Oil Corp. et al's Edwards 1, elev 3128 ft, top salt 2140 ft, sd 5035 ft.

MENARD COUNTY—Barnett et al's Callan 2, cutting off water in gas sand 1267-68 ft. Carl Cromwell & Duffey's Winslow 2, spudded and sd.

MITCHELL COUNTY—Magnolia Pet. Co.'s D. H. Snyder 1, dr 1260 ft. Teas & Wheeler's Radford 1, elev 2223 ft, dr 4655 ft.

NOLAN COUNTY—Gibson & Johnson's S. P. Boyd 1, elev 2126 ft, sd 2950 ft. Phillips Pet. Co.'s Plunkett 1, elev 2423 ft, dr 4530 ft.

PECOS COUNTY — Ed. Bateman & Co.'s Codrova 1, elev 2393 ft, top salt 705 ft, sd 1725 ft; Cunningham 1, dr 1410 ft. M. H. Black et al's Pecos 1, sd 350 ft. Buell-Hagan & Pope's Byrne 1, elev 2512 ft, sd for shot with show oil and gas, td 1392 ft. Cardinal Oil Co.'s Tippett 1, (Sec. 36), top salt 760 ft, dr 910 ft. E. L. Chapman et al's Streety 1, elev 2653 ft, fsh 1625 ft. Cosden Oil Co.'s McDonald 1, elev 2459 ft, changing contractors, td 2015 ft. Carl Cromwell & Harrison's White-Baker 1, elev 2373 ft, fsh 1615 ft. Dixie Oil Co.'s McKenzie 1, sd 140 ft. Fisher & Lowrie's R. D. Webb 1, lcn. Freeman & Miller's Pecos Valley 1, top salt 1240 ft, dr 1570 ft. Spot Geyer & Frates, Inc.'s Sellman 1, machine. Hussman Oil Co.'s Estes 1, bad hole 80 ft. J. L. Kennedy et al's Kennedy 1, elev 3217 ft, sd 2506 ft. Independent O&G Co. & Rowan-Tong, Inc.'s Phelps 1, elev 2615 ft, co at 1885 ft to go to 2800 ft. Kirby Pet. Co. et al's Belgrade 1, dr 525 ft. Mauch & Krogen's Holmes 1, sd 1510 ft. Mazda Oil Corp.'s Cordova 1, elev 2371 ft, dr 1050 ft. W. A. Moncrief & L. C. Turman's Sullivan 1, elev 2401 ft, top lime 1635 ft, dr with hfw (sulphur) 1655-1720 ft. R. E. Moore et al's Arnold 1, elev 3860 ft, sd 1615 ft. J. D. O'Mara et al's Bennett 1, elev 2513 ft, sd 875 ft. Pecos Crude Oil Pur. Co.'s Pecos Valley 4, machine. Phillips Pet. Co.'s T. J. Byrne 1, lcn. M. M. Rowan et al's University 1, pb from 2044 to 1815 ft to test for oil; University 2, cellar. Sides & Cloyd's Blackstone-Slaughter 1, sd 365 ft. Stine & Griffith's Michaels 1, sd 975 ft. Transcontinental Oil Co.'s University 1, elev 2552 ft, top lime 1035 ft, dr 4768 ft. Trees Oil Co.'s J. C. Trees 3, machine. World Oil Co.'s University 1-C, elev 2614 ft, spudding.

PRESIDIO COUNTY—TP Coal & Oil Co.'s Bogel 1, sr 4047 ft.

REAGAN COUNTY — Big Lake Oil Co.'s University 1-C, dr black lime 8210 ft; University 2-C, killed flow oil and gas at 8187-8201 ft, to deepen; University 3-C, co after killing flow oil and gas at 8375-85 ft; University 4-C, flowing 200 bbls oil and 4¼ million ft gas daily at 8220 ft. Group One Oil Corp. (Conoco's) University 2-B, dr sandy lime 3416 ft; University 3-B, fsh drill stem, td 2990 ft.

REEVES COUNTY—Hansford et al's Williams 1, sd 380 ft. Slack & Fink's Brooks-

The big red Halliburton trucks that you see in the field do their work amazingly well; but they are merely the visible symbols of the intense research and scientific study that goes on constantly in the Halliburton laboratories . . . To meet Halliburton standards the strongest commercial trucks are rebuilt to make them *stronger;* the most dependable pumps are strengthened to make them *more dependable;* valves, fittings, plugs and mixing device are all specially designed to give your well the maximum protection to which its liquid treasure entitles it.

HALLIBURTON

OIL WELL CEMENTING CO.

Duncan, Oklahoma

Interesting facts on Cementing Problems and sidelights on petroleum matters in general are contained each month in THE CEMENTER. Would you like to receive a copy regularly? No cost or obligation; simply send in the coupon.

Halliburton Oil Well Cementing Co.,
Dept. OW, Duncan, Okla.
Without cost or obligation, please place my name on the list to receive THE CEMENTER regularly as issued.

Name .....

Company .....

Address .....

Huling 1-A,dr 705 ft. Southern Crude's Kloh 1-A, dry and abn with hfw 5216 ft. Lee O. White et al's Hersheusen 1, elev 3244 ft, top salt 2670 ft, sd 3575 ft.

RUNNELS COUNTY—Gibson & Johnson et al's Wood 1, top lime 3340 ft, tested 200 ft fluid in hole after drlg cement plug, td 3405 ft; Johnson 1, spudded and sd.

SCHLEICHER COUNTY—Delmar Oil Co.'s O'Harrow 1, dr 675 ft. Phillips Pet. Co.'s J. A. Whitten 1, elev 2333 ft, dr 5665 ft. Munger-Wilson Oil Co.'s Page 1, set cas 1020 ft.

SCURRY COUNTY—J. G. Armand & Camp Springs O&R Co.'s Quinn 1-A, dr 3635 ft. Byrd & Harmon's Murphy 1, elev 2298 ft, top salt 775 ft, top lime 1507 ft, sd 1732 ft. Cottingham & Briscoe's Truss 1, elev 2664 ft, top salt 1050 ft, top lime 2175 ft, fsh 3390 ft. Pender O&G Co. & Wm. Little's Davis 1, elev 2208 ft, top salt 445 ft, sd hfw 4300 ft. E. L. Smith Oil Co.'s Mooar 1, elev 251 9ft, top salt 750 ft, testing show oil in lime 2215-22 ft.

STERLING COUNTY — Cranfill-Reynolds Co. et al's Tweedle 1, elev 2500 ft, dr 2050 ft.

TAYLOR COUNTY—J. B. Jameson et al's Webb 1, elev 1905 ft, sd 5143 ft.

TERRELL COUNTY—Big Bend Oil Corp.'s Bassett 1, elev 2396 ft, dr lime rock 1191 ft. Transcontinental Oil Co.'s Goode 1, elev 2405 ft, dr 1010 ft.

VAL VERDE COUNTY — Phantom Oil Co.'s Ingram 1, ur cas 1675 ft. O. O. Owens et al's Mills 1, sd 5440 ft.

WARD COUNTY—Alpine Oil & Dev. Co.'s Dakan 1, dr 550 ft. E. J. Anderson et al's Townsite 1, dr 760 ft. Atlantic & Delmar's Hayzlett 6, co with 1750 ft oil in hole after shot 180 qts. at 2475-2523 ft; Hayzlett 7, lcn. C. C. Dorr et al's Costley 1-A, sd 1160 ft. Fugler et al's Townsite 1, dr 1255 ft. Gulf Prod. Co.'s Hutchings 3, top salt 1035 ft, dr 2570 ft; O'Brien 7, elev 2653 ft, top brown lime 2460 ft, lowering cas with 2800 ft fluid in hole, td 3115 ft. L. C. Harrison Oil Co. & F-H-E Oil Co.'s Wristen 1, elev 2530 ft, top salt 715 ft, dr 2690 ft. Mid-Continent Pet. Corp.'s Coates 1, dr 1140 ft. Penn Oil Co. & Atlantic Oil Prod. Co.'s Bennett 2, dr 1510 ft; Cooper 1, dr 1685 ft. Shell Pet. Corp.'s Sloan-Owen 1, top salt 765 ft, testing to pump, td 3074 ft. Shipley Oil Corp.'s Hayzlett 5, rig; Monroe 1-A, fsh 385 ft. Sun Oil Co.'s Sealy 1, ur cas 1325 ft. Tex-Oil Production Co.'s Redman 1-A, elev 2717 ft, top salt 1290 ft, dr 3010 ft.

WINKLER COUNTY—M. J. Bashara et al's Fee 2, elev 2885 ft, top salt 1163 ft, top lime 2306 ft, missed gas, dr 2690 ft. Champlin-Winkler Oil Corp. (was Liner's) Campbell 1, elev 2884 ft, top salt 1155 ft, sd 3685 ft. A. W. Phillips et al (was Belin's) Brown 2, sd 2843 ft. Sun Oil Co.'s Sealy 2, ur cas 935 ft.

CENTRAL EAST TEXAS

ANDERSON COUNTY — Humble O&R Co.'s E. B. Birdwell 1, Solomon Bowlin sur, elev 420 ft, dr red beds 4030 ft. W. H. Roeser Inc., & Roeser-Pendleton, Inc.'s W. L. Moody 1, Jas. Welch survey, elev 349 ft, dr 1300 ft.

DELTA COUNTY—Gaither Pet. Co.'s Smith 1, J. B. Anderson survey, sd 1310 ft.

FREESTONE COUNTY — Haley-Young et al's Knight 1, David Bullock sur, sd 4718 ft. O. W. Killam et al's R. M. Edwards 1, A. Sanchez sur, rotary rig. C. F. Lytle et al's E. H. Henderson 1, D. Avant sur, lcn. Penn Oil Co. et al's B. M. Burgher 1, Cesario Chamar sur, rotary dk.

HENDERSON COUNTY—E. L. Chapman et al's Cade Bros. 1, Simon Weiss sur, sd 1800 ft. Cranfill-Reynolds Co.'s J. W. Broome 1, Samuel Chairs sur, lcn.

SMITH COUNTY—R. H. Davis et al's J. H. Starnes 1, John W. Allen sur, dr shale 630 ft. Deep Rock Oil Co.-Dan Daniels & J. K. Adair's J. H. Bowdoin 1, M. V. Lout sur, set cas and sd 110 ft. East Texas Petroleum Corp.'s Kadana 1, John McFadden sur, elev 465 ft, sd 1179 ft.

UPSHUR COUNTY—E. L. Chapman et al's J. H. Hudspeth 1, J. C. Dearman sur, sd 3930 ft.

VAN ZANDT COUNTY—Central Oil Co. & H. L. Hunt's S. J. West 1, A. C. Walters sur, elev 564 ft, sd 210 ft. W. H. Kerbow et al's J. A. Everitt 1, A. Carlisle sur, spd. and sd. Howard I. Manley et al's Dr. B. C. Andrews 1, Margaret Neal sur, dk. R. C. McElmurray et al's J. W. Peel-Davis 1, S. T. Meeks sur, rig. Arthur H. Ray-Ward Powell et al's A. J. Berry 1, Nacogdoches County School land sur, spd. and sd. T. G. Shaw et al's W. F. Huddle 1, J. Evans sur, dr 1215 ft. Van Zandt Oil & Dev. Co. (L. J. Moore & W. H. Reid's) Sharp-Robinson 1, J. B. Ybarbo sur, spudded and sd.

VAN ZANDT COUNTY (Van field)—Pure Oil Co.'s A. F. Magers 1, dr 300 ft; R. L. Wells 1, dr 1320 ft. Shell Pet. Corp.'s E. L. Fowler 1, cemented 10-inch cas 301 ft. Sun Oil Co.'s I. W. Thompson 1, lcn. The Texas Co.'s I. P. Tunnell (6 ac.) 1-A, dr 1155 ft; W. White 1, lcn.

SOUTHWEST TEXAS

BASTROP COUNTY—R. L. Botts' Alexander 1, sd at 1325 ft. Atlantic-Johnson's Bryant 1, sd at 2466 ft. Gulf's Spillman 1, dr. Humble's Singer 1, lcn. Superior Oil Co.'s King 1-A, dr; Lasher 1, lcn. Pacific Oil & Gas Co.'s Allredge 4, dr 1575 ft.

BEXAR COUNTY—Burton Oil Co.'s Shook 1, prep to sp in. Eckert et al's Dobrowolski 1, dr. Leon Creek Oil Co.'s Reininger 1, dr. Moore and Juar's Ellison 1, dr. Penn-Tex's Kate May 1, temp sd at 2086 ft.

BEE COUNTY—Houston Oil Co.'s McKinney 1, set csg around 3900 ft. Texas Co.'s Tips 2, sd at 4050 ft; Tips 3, dr 1140 ft. Union Prod. Co.'s Ray 6, dr 2800 ft.

BROOKS COUNTY—Amos Dinn, Trustee's Garcia-Ramos 3, dr. Houston Oil Co.'s Holbein-Wormser 1, tested gas at 4070 and 4084 ft, now dr deeper. Humble Oil & Ref. Co.'s Singer 1, dr 125 ft.

CALDWELL COUNTY — Buchanan's Medina 1, dr 250 ft. Stone et al's Croyne 1, dr 2098 ft; Guinn 2, dr 2200 ft. Harper et al's Thomas 3, fsh. Keen et al's McNeill 1, dr 920 ft.

DEWITT COUNTY — McIntyre's Van Rooder 1, dr 1500 ft. Ross et al's Leinhardt 1, dr. E. P. Zoch's Steinman 1, sp in.

DIMMITT COUNTY—Texas Fuel Gas Co.'s City Bank 1, dr 690 ft; Laxon 1, testing around 1430 ft.

DUVAL COUNTY—Allied Gas Co.'s Dinn 8, lcn. R. M. Buckner's Peters 1, dr; Bruni 1, dr 200 ft. Humble's Koehler 38, prod 25 bbls at 1739 ft; Koehler 39, dr 1794 ft. O. W. Killam's Bruni 16, dr 1300 ft. Chas. Long's Hahl 4, now dr 1800 ft. J. G. Mackey's Dinn 3, dr 1700 ft. Magnolia Pet Co.'s King-Harper 2, lcn; Brennan-Benavides 1, ru to dr deeper. Southern Oil Co.'s Welder Woods 1, standing at 750 ft. Reilly, Trapshooter and C. W. Long's Hahl 4, dr.

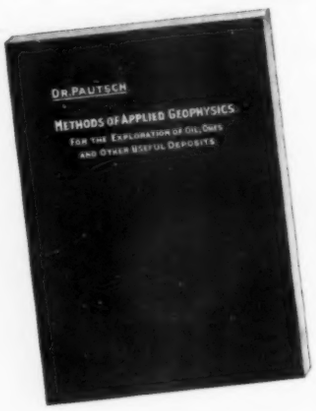
FALLS COUNTY—O. W. Killam's C. A. Jones 1, dr.

FAYETTE COUNTY—Smith Bros.' 1, sp in.

GOLIAD COUNTY—Compton & Co.'s A. T. Framme 1, sd. Humble's Spangle 2-A, sd below 700 ft. Union Prod. Co.'s Lucas 1, dr; Ray 5, dr. Zoch et al's Kaufman 1, prod 40,000,000 cubic ft of gas at 4230 ft.

GONZALES COUNTY—Acme Oil & Royalty Co.'s H. R. Weber 1, dr 1725 ft. Beeman and Station's Station 1, dr. Bruner's Miller Bros. 1, dr 3465 ft in gumbo. Burt and Son's F. C. Menking 1, dr 2100 ft in shale. Keiffer et al's Dix 1, dr 2880 ft. Grayburg Oil Co.'s Willow Springs 1, spd in. Garrett, Mrs. Alice Richardson's Cardwell 1, (near Pilgrim) dr below 500 ft. Green et al's Dix 1, fsg at 2816 ft. Linderman Bros.' Framphan 1, fsg at 2060 ft. United North and South Dev. Co.'s Preston 1, dr 5380 ft; Kerr 1, dr 3200 ft.

GUADALUPE COUNTY — Abercrombie & Harrison's Dix 1, lcn. Adams & Lisles' Zoboroski 1, flowed 2000 bbls of sulphur water at 2660 ft in Edwards lime. Cranfill & Reynolds' R. C. Appling 1, dk. Clemens-Trinity Dr. Co.'s Rand Miller 2, lcn; Rand Miller 3, lcn. Empire Oil & Gas Co.'s Wilson Dowdy 1, prod 900 bbls at 2607 ft. Grayburg Oil Co.'s Wells 1, swabbing at 3901 ft. Gulf Prod. Co.'s Cearcy Anderson 1, dr 1900 ft; Tadlock 1, dr 1970 ft; Dix 1, set csg at 2600 ft; Parish 1, lcn. Humble's D. D. Baker 3, prod 1400 bbls at 2621 ft; Yates-Wilson 1, dk;



Methods of Applied Geophysics

For the Exploration of Oils, Ores, and Other Useful Deposits.

By

DR. ERICH PAUTSCH, *Geophysicist*

It is the purpose of this work to give a short, concentrated presentation of the results of theoretical and experimental research in applied geophysics. It gives to the physicist the principle of the geophysical methods, and will interest and incite him to specialized study. It affords all those who are already working in one or another geophysical branch, an insight into all geophysical methods.

Complete with formulas and graphically illustrated. 82 pages, paper binding.

Price, $6.50, Postpaid.

Send check to

THE GULF PUBLISHING COMPANY

P. O. Box 1307, Houston, Texas

More than a QUARTER CENTURY of EXPERIENCE and DEVELOPMENT has been built into ~

THE LAYNE

MILLED GROOVE SCREEN

~And you get far greater production, longer life and more economy than in any other method ~Large companies abroad and in this country will testify to this fact ~ ~ ~ ~ ~ ~ ~

The Layne & Bowler Co.

Houston THE LAYNE Texas

Increases Production

Install Milled Groove Instead of Wishing You Had!

Yates-Wilson 2, set csg at 2560 ft; Yates-Wilson 3, lcn; Denman 1-A, prod 1344 bbls at 2597 ft; Sally Wilson 3, set csg about 2575 ft; Sally Wilson 2, set csg at 2580 ft. Magnolia's A. M. Baker 1, dr 2685 ft; Echols 1, dr 2400 ft; Roamel 1, dk; Zedler 2, mvg on; Dix 2, making 2096 bbls at 2600 ft, deepened from 2588 ft; Dix 3, dr; Dix 4, lcn; Dix 5, lcn; Richburg 1, dr 1400 ft; Goldman 1, lcn. Penn Oil Co.'s Rand Miller 1, dr in at 2603 ft, csg set at 2593 ft. Pagenoff and Kennon's O. J. Halm 1, sd. Shell Pet. Co.'s Denman 1, dr 3225 ft in chalk. Sun Oil Co.'s Knoblock 1, dr below 2500 ft. Texas Co.'s Roamel 1, dr 2305 ft; Roamel 2, dr 2150 ft; Posey 1, prod 1800 bbls at 2605 ft; Dallas-Wilson 2, dr 2486 ft; Dallas-Wilson 3, dk; Dallas-Wilson 4, dk; Henry Willie 1, dr 2343 ft. Turman's Rand Miller 2, drlg 1800 ft; Dowdy 1 (Guadalupe County) prod 1300 bbls at 2620 ft.

JIM HOGG COUNTY—Alworth Stevens & Hild's Garza 1, dr. Deep Rock Oil Co.'s Kelsey 1, standing at 2532 ft. L. M. Holden's Jones 4, dr. O. W. Killam's Martinez 1, dr. Magnolia Pet. Co.'s Martinez 4, dr; Martinez 5, dr; Weil 1, dr 1650 ft. Geo. Marshall's Holbein 4, dr; Holbein 5, dr. Moore-Milam Dr. Co.'s Guerra 1, dr. Randado Oil Co.'s Palacios 35, standing. Chas. Stevens' Garza 2, picked up sand at 1043 ft. Texas Co.'s Bandera 1, dk; F. N. Zooch's King 1, ru.

KARNES COUNTY — Benedum & Trees' Crewe 1, dr. J. O. Claypool's P. W. Tom 2, dr 1250 ft. Texas Co.'s Butler Medio Ranch 1, dr; Barnett 1, dr.

KERR COUNTY—Machs et al's Love 1, ru heavy dk. Page et al's Real 1, dr around 4700 ft.

KENDALL COUNTY—Bartet et al's Willis Haag 1, dr; Dixon 1, lcn. Sterling et al's Wermer 1, dr.

KLEBERG COUNTY—Simmon & Bowen's Simmon 1, set surf csg.

LA SALLE COUNTY — Southwestern Pet. Corp.'s Beckwith 1, dr. Sun Oil Co.'s Berry 1, dr. Salt Lake City Oil Co., 1, Sec. 17, dr.

LIVE OAK COUNTY—Houston Oil & Gas Co.'s Dunning 1, dr 4250 ft. Cattlet & O'Neill's Smith 1, standing 3500 ft. Lion Oil & Gas Co., 1, lcn. Simmons Oil Co., 1, dr 1800 ft.

MAVERICK COUNTY — Rycade Oil Co.'s Chittim 3, dr 6190 ft, showing oil and gas; Chittim 4, dr 5660 ft; Chittim 5, dr 2100 ft.

MEDINA COUNTY — Calico Pet. Co.'s Crawford 1, dr. Switzer et al's Zerr 1, dr 3740 ft. Pat Armstrong's Hutts 1, sd at 1300 ft.

McMULLEN COUNTY — Sun Oil Co.'s Berry 1, plugged at 2207 ft.

NUECES COUNTY — Graham, Wallace, Yeakery & Patton's Roberts 1, dr 2120 ft.

REFUGIO COUNTY — Benedum & Trees Oil Co.'s Rooke 3, dr 5250 ft. H. Heap's Rutherford 1, dr 1920 ft. Houston Oil Co.'s Rooke 11, dr 5200 ft; Rooke 12, dr 5150 ft; Pratt-Rooke-Hewitt 11, dr 2830 ft; Pratt-Hewitt-Rooke 12, dr 3610 ft. Houston Gulf Gas Co.'s Ryals 5, dr; Shelly 9, spd in; M. F. Lambert 1, dr 4100 ft; Morgan Vance 2, dr 1300 ft; Cummings 2, dr; Cummings 3, mvg on; O'Brien 6, dr 650 ft. Independent O. & G. Co.'s Annie Reilly 1, being completed at 3695 ft; O'Brien 1, set csg at 6502 ft; J. B. F. Heard 1-A, gasser at 3672 ft; J. B. F. Heard 1-B, set csg at 3666 ft; West 2, dr 1840 ft in gumbo; J. B. F. Heard 2-B, dr 2733 ft in sandy lime; Reilly 4, bailing at 3694 ft; Reilly 6, ru; Shelly 1, dr 2950 ft in shale. Lario Oil Co.'s Straugh 1, large gasser at 3680 ft. Morgan Oil Corp.'s Fox 1, dr; City 4, spd in. Oigufer Oil Co.'s Ryals 3, spd in. Pearson Properties' Hornberg 1, dr; Babb 1, set csg; Fox Heirs 3, dr 2740 ft. E. Price's Mission 1, prep to spd in. Saxet Oil Co.'s Ryals 1, dr in, csg set about 3680 ft; Holmes Heard 3, gasser at 3698 ft. Texas Co.'s Shelton -, spd in. Union Prod. Co.'s O'Brien 2, dr 5400 ft; Shelton 1, dr 3800 ft; Mitchell 2, dr in at 5450 ft; Powers 2, dr in at 5440 ft.

SAN PATRICIO COUNTY — Spencer & Rhodes' Fee 3, (Texas Company) dr. Laferria Oil & Gas Co.'s Smith 1, dr 2250 ft.

STARR COUNTY—Adams-Scanlon-Scanlon-Wright's Margo 1, standing at 30 ft. W. R. French's Reilly Allen 5, dr 3006 ft. Smith-Adams' G. B. Welch 1, dr 631 ft. Milam Dr. Co.'s Allen 5, dr.

VICTORIA COUNTY — Humble's Welder 3-A, dr 3450 ft.

VAL VERDE COUNTY — Blume et al's Yost 1, dr. Owens et al's Mills 1, sd 5295 ft. Phantom Oil Co.'s Ingram 1, dr 1595 ft. Transcontinental Oil Co.'s Goode 1, dr.

UVALDE COUNTY — Phantom Oil Co.'s Claudt 1, prep to spd in. Weldon & Welch's Benson 1, dr 750 ft.

WEBB COUNTY—E. H. Buckner's Bruni 1, prod 25,000,000 cubic ft of gas at 2282 ft. Foster Barnsley's Webster 8, dr 2150 ft. Houston Oil Co.'s Benavides 2-G, lcn; Benavides 2-D, dr. J. J. O'Brien's Benavides 3, spd in; M. Benavides 1, dr; Perez 1, dr. Magnolia, S. Perez 1, standing at 3755 ft, waiting on water to resume dr; F. Benavides 1, dr; D. Benavides 1, dr; Bernnan-Benavides 4, set csg at 2647 ft, to test sand at 2470 ft; Benavides 1-C, dr 1375 ft; King-Benavides 2, ru. C. E. Mayberry's Puig 9, plugged and abn at 1596 ft. W. R. Shankle's Webster 2, dr.

WILSON COUNTY—Rycade Oil Co.'s Hise 1, dr. Tidal Oil Co.'s Kulesza 1, dr 3250 ft. Trinity Drillers-Arkansas Fuel Oil Co.'s Richter 1, dr.

ZAPATA COUNTY—Allied Gas Co.'s Martinez 1, dr 800 ft. Blair & Son and Claggett's Trevino 2, cleared hole after fsh job—prep to again set csg at 1251 ft. Duval Oil Co., 1, dr. Blankenship et al's Garza 1, fsh for dr stem at 1670 ft; Montemayor 1, swabbing some oil at 1300 ft; Garza 2, ru. Duke and Evangeline's Martinez 2-B, standing at 950 ft. Harry Fansler's F. Cuellar 1, prod 40,000,000 cubic ft of gas at 1676 ft. O. W. Killam's Cuellar 15, dk; Cuellar 18, tested dry at 1643 ft—pulled csg and will reset at 1473 ft; Cuellar 19, lcn; Martinez 1, coring at 980 ft. South Texas Prod. Co.'s Roy Jennings 2, standing at 2150 ft; Joe Jennings 8, abn at 1875 ft. John Pappas' Cuellar 2, set csg to test sand at 1850 ft.

ZAVALLA COUNTY—Wiegand, Forbes et al's Gates 1, spd in; Johnson Bros. 1, lcn; White Cotten 1, lcn. Texas Gas Fuel Co.'s West 2, sd at 1820 ft; West 3, dr 250 ft.

EAST TEXAS

BOWIE COUNTY—Hooks O. & G. Co.'s Rosenberg 1, King sur, ta 3086 ft.

CAMP COUNTY—Rogers et al's Enfelt 1, Montgomery sur, sd 1920 ft.

RED RIVER COUNTY—D. M. Buffington's Hoosier 1, Hughart sur, 1863 ft. Shad Harper's Garland 1, Wagley sur, sd 1440 ft. Johnson Pet. Co.'s Randolph 2, Dean sur, sd 1862 ft.

SHELBY COUNTY—Chapparral Oil Co.'s Holt 2, Matthew Moore sur, co td 3004 ft.

TEXAS GULF COAST

BRAZORIA COUNTY — Shell's Blakely-Winston 1, Danbury, dr below 2950 ft. Mills Bennett Prod. Co.'s Allen 1, Allen dome, dr 4720 ft.

CHAMBERS COUNTY — Pure's Mayes 1, Lost Lake, testing at 2839 ft; Mayes 4, preparing to plug to 2818 ft; Mayes 6-A, tested salt water at 2844 ft, pulled screen to deepen; Mayes 8, abandoned at 3086 ft; Mayes 9, ru; Lost Lake 4, lcn.

FORT BEND COUNTY—Gulf's Brazos Valley Irrig. Co. 1, 3 mi sw Clodine, ru; Moore 20, Moores Field, dr 630 ft.

HARRIS COUNTY—Humble's Simms-Smith 77, Goose Creek, ru; Warren 7, Hockley, ru; Woodburn 2, preparing to make drill stem test at 3865 ft; Minnetex 2, Mykawa, standing at 1177 ft; Siadous 1, Mykawa, dr 3950 ft. Watts Drlg. Co.'s Hubert 1, Mykawa, dr 4365 ft hard shale. Higgins Oil & Fuel Co.'s Siadous 1, preparing to make test at 4130-50 ft. J. M. West's Scorrega 1, Goose Creek, flowed salt water at 5075 ft. Cranfill-Reynolds Co.'s Brown 1, 5 mi nw Goose Creek, water sand at 4520 ft. Mrs. J. C. Baldwin's Kitzman 1, 2 mi n Cypress, sd 4055 ft. Buffalo Oil Co.'s Beall 1, 3 mi nw Eureka, dr 1650 ft gbo.

JEFFERSON COUNTY — Westbury Oil Co.'s West 1, dr 850 ft. Gulf's Bordages 8, Fannett, dr 5560 ft shale; G. W. Junker 1-A, dr 4250 ft. The Texas Co.-Houston Oil Co.'s Fitzhugh 1, Big Hill, dr 5290 ft shale and lime. The Texas Co.'s Pipkin 2, Big Hill, dr 5920 ft sticky shale. Stillwell Oil Co.'s Brinkman 1, Port Arthur, dr 2710 ft shale.

LIBERTY COUNTY — Humble's Jamison Fee 1, N. Dayton, dk; Sterling 6, Moss Bluff, completed for 800 bbls at 5666 ft. Gulf's Weiser 1, Hankamer, dr 5550 ft sticky shale; Boyt 3, dr sand 3835 ft. Cranfill-Reynolds Co.'s Vajdak 1-A, Esperson Dome, completed for 3 million ft gas at 5750 ft; Esperson 4-A, dr 1780 ft gbo; Esperson 5, dr 2000 ft gbo; Esperson 6, ru. Yount-Lee Oil Co.'s Moores Bluff Corp. 1, Esperson Dome, dr 4550 ft.

ORANGE COUNTY — Veteran Oil Co.'s Read 1, 2 mi se Orange field, dr 360 ft gbo and lime. The Texas Co.'s Polk 2, Port Neches, ru. Gulf's H. J. Stark 1, Port Neches, dr 5780 ft lime rock.

POLK COUNTY—Humble's Parrish 1, 2 mi se Moscow, dr 375 ft shale. Sunshine Oil Co.'s Chase 2, 7 mi se Livingston, preparing to pump.

WALLER COUNTY—Kirby Pet. Co.'s Davis 1, San Felipe, lcn. W. P. Morris' Chapman 1, 6 mi north of Hempstead, dr 1530 ft shale.

SOUTH LOUISIANA

ACADIA PARISH — Yount-Lee Oil Co.'s Houssiere-Latrielle 7, Evangeline, completed at 7450 feet for 1500 bbls daily; Housiere-Latrielle 8, lcn; C. O. & M. Co. 5, dr 1550 ft sand; Simms Fee 1, dr 6675 ft. Chas. P. Seiss's Abshire 1, dr 2900 ft. The Texas Co.'s Rayne Hrs. 5, Evangeline, dr 5800 ft sand rock.

ASCENSION PARISH—Gulf's United Lds. Co. 17, Sorrento, moving in.

ASSUMPTION PARISH—Gulf's Armaline Planting Co. 1, Napoleonville, ru.

CALCASIEU PARISH—J. O. Davis' Industrial Lbr. Co. 1, dr 3350 ft. Gulf's Lutcher-Moore 18, Starks, bailing at 800 ft. Texas Gulf Sulphur Co.'s Lutcher-Moore 8, Starks, dr 300 ft; No. 7, dr 1300 ft.

CAMERON PARISH—Pure's Yount-Lee 8, Sweet Lake, sdtr 4575 ft; No. 9, set casing at 1408 ft. Shell's A. Marceaux 1, Mallard Bay, set casing at 6000 ft. Yount-Lee Oil Co.'s W. H. Stark 1, Johnsons Bayou, dr 7125 ft lime and shale. Vacuum Oil Co.'s Cameron Meadows Ld. Co. 1, e Johnsons Bayou, moving in rig.

EVANGELINE PARISH—The Texas Co.'s Guillery 1, Pine Prairie, abn 4830 ft.

IBERIA PARISH — The Texas Co.'s Vermilion Bay A-4, dr 4650 ft.

JEFFERSON DAVIS PARISH—Pure's Day 1, 1½ mi sw Welsh, spudded.

LA FOURCHE PARISH—Gulf's City of New Orleans 1, Marchand, dr 1600 ft. Gulf's Stark 25, Thibodaux, dr 3025 ft cap rock. Humble's Cockrell-Moran 1, Lake Grande Ecaille, dr 825 ft; Lake Washington 1, reaming at 4260 ft.

ST. LANDRY PARISH—Elbof Explorations' Valmont Ledoux 1, Eunice, dr 3610 ft sandy lime. The Texas Co.'s Botany Bay Fee 3, Port Barre, dr 2910 ft. Hebert-Baker Oil Co.'s Fisher 1, dr 3000 ft. Gulf's W. H. Hoskins A-1, Port Barre, flowing 200 bbls at 3415 ft. Gulf's Lahaye 1, Port Barre, moving in.

ST. MARTIN PARISH—The Texas Co.'s St. Martin Ld. Co. 1, Hager Dome, dr 5660 ft hard sand; No. 2, dr 4450 ft; Iberville Ld. Co. 1, Hager Dome, dr 4530 ft. Youn-Lee Oil Co.'s Hebert Heirs 1, Anse la Butte, ru. Rycade-Humble's Bayou Bouillon 9, ru.

ST. MARY PARISH — Empire-Vacuum's Zenor 1, 2 mi n Pattison, ru.

TERREBONNE PARISH—The Texas Co.'s Lake Pelto B-3, dr 900 ft; Bay Junop 1, sand at 4700 ft; Bay St. Elaine 4, bldg foundation; Lake Barre 3, dk; Caillou Island 2, dr 1460 ft water sand; Dog Lake Bayou B-2, dr 3680 ft.

NORTH LOUISIANA

Completions

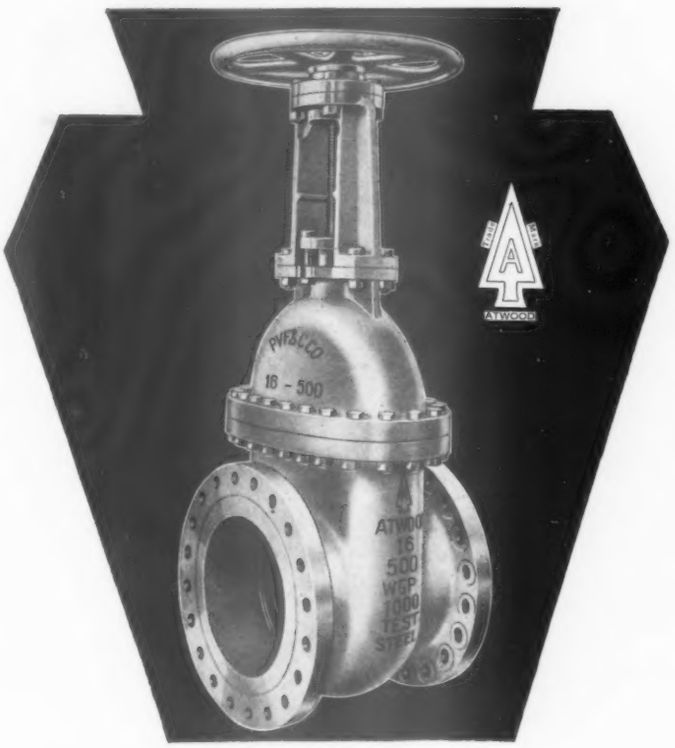
SABINE PARISH (Zwolle)—
R. L. Gay, Tr., Long-Bell Lbr. Co.
1, 26-8-14 ..... * 3663

BOSSIER PARISH — C. L. West et al's Sentell-Dickson 1, 3-20-13, dk. Corbett et al's Murff 1, 16-17-11, sd 990 ft. Lanier et al's eL Rosen 1, 26-21-14, dk, pat. Nell & Lanier's Biedenharn 1, 23-21-14, hfw, wosr, td 998 ft. Walker et al's Antrim 1, 28-22-13, sd 3184 ft. Jacob Laskin, Tr.'s Pardee 2, 3-22-11, set 5¾-inch cas 2648 ft, 2 ft sand, td 2655 ft. Morgan et al's Weatherbee 2, 28-19-11, dr 2526 ft. Nesbitt et al's Leonard 1, 20-19-13, set 6⅝-inch cas 2538 ft, coring 2620 ft. Sam Gold et al's McFarlin 1, 7-19-13, sd, wo 1000 ft. Natural Gas Prod. Co.'s U. S. 1, 31-23-11, recemtd 4½-inch cas 3129 ft, td 3158 ft. Muslow Oil Co.'s Barnett 1, 25-23-11, old well arr deepen, td 3076 ft. Goodman-Johnson's Martin 1, 26-23-12, recemtd 6⅝-inch cas 3148 ft, td 3153 ft. Muslow Oil Co.'s Marks Meyer 1, 36-23-11, old well arr deepen, td 3088 ft. Northwest La. Nat. Gas Co.'s Bolinger 5, 38-23-11, rig up. Smitherman et al's Kilgore 1, 31-23-11, wo 3156 ft. Mag-

ATWOOD *Steel Valves Are More Efficient in Compressor Stations*

ONE of the leading gas companies called upon ATWOOD Service to help them overcome inefficiencies in valves on their Compressor Station lines. A valve, of ATWOOD Electric Steel and Bronze trim, as illustrated, was designed, manufactured and installed in ten days. But more important than the helpfulness and speed of ATWOOD Service, the valve fully answered the purpose for which it was designed—to the complete satisfaction of the customer.

This is but one of many cases on which this company has been called in and the problem solved. ATWOOD experience, facilities and wide range of products no doubt can meet any difficulty you are encountering and also afford you a quick and economical service for your day-to-day requirements in valves, piping and fittings.



16" ATWOOD Electric Steel, Bronze Mounted, 1000-lb. test, 500-lb. working pressure, Parallel Seat, Double Disc, O. S. & Y, Flanged Gas Gate Valve.

We shall be pleased to furnish further information.

PITTSBURGH VALVE, FOUNDRY & CONSTRUCTION CO.

PITTSBURGH ~ PENNA.

DISTRICT OFFICES

New York City	30 Church Street
Chicago, Ill.	80 East Jackson Blvd.
Boston, Mass.	185 Devonshire Street
Cleveland, Ohio	858 Rockefeller Bldg.

REPRESENTATIVES

Detroit, Mich.	Garrett Burges, Inc., Woodbrook Bldg.
Houston, Texas	Maintenance Eng. Corp., 1400 Conti Street
Atlanta, Ga.	Moore-Broach Eng. Co., Forsyth Bldg.
Philadelphia, Penna.	R. J. Crozier Co., 10 South 18th Street
Los Angeles, Cal.	John G. Bell Co., 712 East Sixth Street

VALVES · WELDED PIPING · FITTINGS

nolia Pet. Co.'s Robertson 1, 26-23-12, old well did not deepen, abn, td 3059 ft; Rogers A-1, 21-23-12, tested 3 joints oil, 1 joint sw thru ds set 5¾-inch cas 3217 ft. Texas Co.'s Rose 3, 31-23-11, dr shale 800 ft. La. Pet. Co.'s Peyton 2, 25-23-12, dk; Peyton 3, 25-23-12, dk. Palmer Corp.'s Robinson 1, 26-23-12, fsh for ds 3130 ft. Delaware-La. Dev. Co.'s Bolinger 2, 31-23-11, old well, rig up to deepen. Texas Co.'s J. W. Peyton 2, 25-23-12, lcn; J. W. Peyton 3, 30-23-11, lcn.

CADDO PARISH—Sam Gold et al's Hunter 3, 17-19-14, wosr, td 2457 ft. I. N. Pharris' Oden 1, 19-19-14, set 6⅝-inch cas 2379 ft, td 2409 ft. Standard Oil Co. of La.'s Hunter 3, 17-19-14, set 6-inch cas 2360 ft. Lide et al's Dickson 1, 10-19-14, coring 2400 ft. Gulf Ref. Co.'s Oden 5, 18-19-14, ta 2425 ft; Oden 6, 18-19-14, set 6⅝-inch cas 2380 ft, td 2416 ft. Texas Co.'s Sentell 3, 9-19-14, rig up. Old River Corp.'s Byrd 1, 15-19-14, wosr, td 2472 ft; Sibley 1, 15-19-14, wosr, td 2495 ft. R. W. Norton's Hill 1, 33-23-16, fsh core bbls 4403 ft.

CLAIBORNE PARISH — Leue Oil Co.'s Taylor 1, 16-22-8w, dk. El Dorado Chief Oil Co.'s Simmons 1, 27-20-7w, sd in shale and bldrs 2240 ft. Triangle Drilling Co.'s Kilpatrick 1, 7-19-5w, dr shale 4150 ft.

DESOTO PARISH—Benson O. & G. Co.'s Harris 1, 6-10-13, set 6⅝-inch cas 7 ft sand, bailing show gas 3070 ft.; Hill 1, 3-10-13, coring 3190 ft. R. O. Roy's Farmer E-1, 5-13-13, sd 725 ft; Farmer B-1, 8-13-13, dk. Benedum & Trees' Johnson 1, 7-11-13, dk.

FRANKLIN PARISH—Franklin O. & G. Co.'s O'Brien 1, 7-15-9e, cemtd 15½-inch cas 208 ft. Davis et al's Moore 1, 12-11-6e, sd 1430 ft.

LASALLE PARISH—Tunica Pet. Co.'s L. & A. 52, 17-7-2e, coring 2360 ft.

MOREHOUSE PARISH — P. J. White's Chess Wymond 1, 32-19-6e, sd 3025 ft.

NATCHITOCHES PARISH — S. D. McDaniels' Clark-Morse 1, 23-5-6w, sd 2536 ft. Robeline O. & G. Co.'s Winn 1, 7-8-9w, sd 867 ft. Nichols & Wilder's Clark 1, 10-10-8w, sd 2110 ft.

OUACHITA PARISH—J. L. Bullock, Tr.'s West Va. 1, 25-18-5e, set 9-inch cas 2303 ft, dr sandy shale 2630 ft.

RAPIDES PARISH—Ayers Bros.' Wicklipp 1, 9-5n-2w, sd 2530 ft.

RED RIVER PARISH — W. D. Ball's Krumbholz 1, 32-14-10, sd 1515 ft. Eylers O. & G. Co.'s Johnson 1, 17-12-10, sd 2550 ft. Le Grande et al's Sample 1, 11-14-11, rig up. Triple Oil Co.'s Pollock 1, 33-13-11, wosr, td 2470 ft.

RICHLAND PARISH—Richland O. & G. Co.'s Singletary 1, 20-18-7e, sd 968 ft. Austin & McDonald's Millsaps 2, 17-17-6e, sd 2697 ft; Millsaps 3, 16-17-6e, sd 2477 ft; Millsaps 4, 16-17-6e, lcn; Millsaps 5, 8-17-6e, dk; Hunt 1, dk. Industrial Gas Co.'s Hodge 1, 7-16-7e, sd 2586 ft. A. T. Davidson 1, 6-16-7e, coring 2614 ft; Davidson A-1, 6-16-7e, wo 2470 ft. Rustin Drilling Co.'s Hodge 1, dr rock 2477 ft. Triangle Drilling Co. and Woodley Pet. Co.'s Cumpton 1, 16-17-7e, tested dry 2492 ft, coring 2495 ft. Woodley Pet. Co.'s Buie 1, 32-18-7e, sd wo 2485 ft. S. R. Humble's Binion-Sartor 1, 20-17-6e, heading well, td 2481 ft. Palmer Corp.'s Eubanks 1, 26-17-6e, ds stuck 2420 ft; Miles 2, 12-17-6e, set 6-inch cas 2316 ft, wo. W. C. Feazel's Landrum 1, 6-16-7e, dk. Shreveport Contractors' Buie 1, 17-15-7e, sd in black shale 2527 ft.

SABINE PARISH—Sabine O. & G. Co.'s Anderson 1, 19-8-12, coring hard chalk rock 2300 ft. R. L. Gay, Tr.'s Long-Bell Lbr. Co. 1, 26-8-14, dry, abn, td 3663 ft; Bowman-Hicks A-2, 3-7-12, rig up; Bowman-Hicks 6, 14-7-14, dr rock 186 ft; Sabine Lbr. Co. 3, 13-7-14, dr gummy shale 1700 ft. A. H. Tarver et al's Long-Bell Lbr. Co. 2, 18-8-13, setting 8¼-inch cas 1870 ft, td 1962 ft; State Bank 1, 27-8-12, rig up. Olsan Bros.' Hooker 1, (formerly carried as Keelan 1), 27-8-12, topped chalk 2357 ft, tested dry thru ds 2370 ft, setting 6⅝-inch cas 2333 ft, td 2430 ft in chalk. Ohio Oil Co.'s Bowman-Hicks 1, 35-8-12, dr hard rock 1420 ft; Bowman-Hicks 2, 33-8-12, cemtd 10-inch cas 236 ft. Bridges-Clark Oil Co.'s R. L. Gay et al 1, 3-9-12, rig up. J. C. Tippett's Hughes 1, 36-8-12, dk. Stovall Drilling Co.'s Sabine Lbr. Co. 1, 31-8-12, lcn. Rustin Drilling Co.'s Holliday 1, 35-8-12, moving in rig. V. M. Miller's Peterson 1, 26-8-13, lcn. Usinovitch et al's Lefkovitz 1, 33-8-12, lcn. Le Grande et al's Haley 1, 6-7-12, setting 6-inch cas at 2100 ft. D. H. Reddick, Tr.'s Scretchfield 1, 18-9-12, dr shale 2040 ft. W. D. Ball's Long-Bell Lbr. Co. 1, 26-8-14, lcn. Ruston Drilling Co.'s Bowman-Hicks 1, 4-7-12, dk. Haynes Bros.' Meyer 1, 28-8-12, rigged up ready to sp. Amerada Pet. Corp.'s Bowman-Hicks 1, 33-8-12, lcn. Warner-Quinlan Co.'s Sabine Lbr. Co. 1, 34-8-12, lcn; Sabine Lbr. Co. 2, 34-8-12, lcn.

UNION PARISH—Fred Stovall's Stovall 1, 32-23-4e, rig up.

WEBSTER PARISH—F. M. Fuller's Monzingo 1, 27-18-8e, sd 600 ft. Pat Hudson's Gardner 1, 1-22-11, dk; B. L. Slack 1, 36-23-11, rig up. E. W. Bateman's Womble 1, 1-22-11, tested sw, show oil 5 ft sand, arr plug back, td 2712 ft; Womble 2, 1-22-11, lcn. Magnolia Pet. Co.'s McCook & Hibbler 1, 22-21-10, sd, wo 6975 ft; Denman 2, 1-22-11, dk; Baker 1, 35-23-11, dr shale 3050 ft; Bailey 1, 29-23-9, tested little oil, pumping sw, td 2758 ft. Sales & Walker O. & G. Co.'s Bolinger 4, 30-23-11, rig up. Sarepta Oil Co.'s Gardner 1, 1-22-11, tested sw, show oil 5 ft sand, td 2719 ft. Paul C. Warren's Martin 1, 20-20-9, cored sand showing oil and gas 1759 ft, wo. Donohoe Oil Co.'s Roseberry 1, 19-23-9, sd 104 ft.

WEST CARROLL PARISH—Palmer Corp.'s Marston A-1, 11-19-10e, sp dr 50 ft.

MOUNTAIN STATES

COLORADO

ADAMS—N. M. Slatt, 27-35-64, carry 12½-inch at 1004 ft.

ARCHULETA—Standard of Colorado, Inc., Fitzhugh 1, sw 34-33n-1e, mvg in.

BENT—Continental's Pipe Spring 1, se 27-27-49, dr 5215 ft.

DOLORES—Transcontinental's Glade 1, nw 30-41-16, dr 5634 ft.

ELBERT—Belmont Oil Co.'s Maher 1, sw 4-6s-59w, installing standard equipment.

JACKSON—Midwest's Rich 21X, nw 9-6-9, sd for winter at 3381 ft. P. & R.'s Fuller 1, 2-6-81, sd for winter at 3610 ft.

JEFFERSON — Ruby Hill O. & G. Co.'s Braden 1, se 14-4s-69w, ur to 3678 ft.

HUERFANO—Parker Club-Kinney Coastal's Fee 1, 4-28-68, dr 3935 ft.

LAS ANIMAS—Trinidad Dev. Co.'s Flontz 1, se 23-32-63, stand 2466 ft.

LARIMER—Standard of Colorado's Hertaha 1, 21-4n-69, stand 2045 ft.

LA PLATA—Royal P. & R.'s Red Mesa 1, 27-33-12, prep to resume 360 ft. Detroit Oil Ass'n.'s Olbert 1, sw 9-36-12, fsg.

LINCOLN—Kelly Oil Co.'s State 1, ne 36-14-57, stand 2954 ft.

MESA—Argo Oil Co.'s Hoel 1, 23-8s-104w, ur and co, td 2700 ft.

MOFFATT—McLaughlin et al's Williams 1, 2-3-92, dr 4347 ft. Vermillion O. & G. Synd., 1, se 92-9n-100w, stand 642 ft. Texas Prod. Co.'s Berlin 1, ne 19-12n-100w fsg tools 2187 ft. Midwest, 1, on 4-6-92, moving in.

MONTEZUMA—Hallett et al, 1, se 14-36-14, sd 50 ft.

PUEBLO—Beulah Dome Oil Co.'s Hedland 1, 7-23-67w, sd 930 ft.

RIO BLANCO—White Eagle's Fordham 1A, sw 9-2-96, dr 2826 ft. Texas Prod. Co.'s Potter 1, sw 30-2n-96w, repairing, td 5588 ft.

ROUTT—Major Pet.'s Black Wolf 1A, sw 7-2-43, stand 1535 ft. Phillips' Andrews 1, nw 3-2-42, dr 4395 ft. Ruby Hill O. & G. Co.'s State 2, 17-6n-86w, plug back from 3050 ft.

WASHINGTON—Middlemist Oil Co.'s Middlemist 1, se 14-4s-56w, stand 105 ft.

WELD—Platte Valley Pet. Corp.'s Patterson 1, se 24-6n-61w, td 4705 ft.

YUMA—Phillips Pet.'s Andrews 1, nw 3-25-4w, dr 4596 ft.

WYOMING

BIG HORN—P & R 3, 24-56-98, fsh tools 4183 ft. Westland Oils, Inc., 24-54-95, crooked hole 360 ft. Wisconsin Holdings, 4-55-97, sd 665 ft. Cody Pet. Corp., 27-57-96, dr 3478 ft.

FREMONT—Kinney Coastal Oil Co., 22-3-1, dr 3380 ft. Texas Prod. Co.'s State 1, 36-34-95, dr 1425 ft. Premier Oil Co., 7-28-93, dr 1150 ft.

HOT SPRINGS—Midwest, 8, 6-44,98, sd for winter at 1052 ft. Ohio Oil Co.'s Smith 1, 9-46-99, dr 2920 ft. Gebo Cons. 1, se 23-44-95, ur.

JOHNSON—United Oil Co., 7-47-82, dr 600 ft.

LINCOLN—Midwest's Grays River 1, 25-37-117, sd for winter at 1731 ft. Mountain Oil Corp., 36-25-115, dr 100 ft last report.

PARK—Ohio Oil Co.'s Burlington 1, 21-53-101, fsh 4290 ft. Resolute Oil Co., 17-27-101, dr 4400 ft. Cody Pet. Co.'s Danger 1, sw 22-57-98, fsh casing.

SWEETWATER — Mountain Fuel Supply Co.'s Cappers 1, 2-9-104, dr 3185 ft. Mountain Fuel's U P 1, 13-19-104, dr 2500 ft.

UINTA—Calif. Co.'s U P 1, 7-17n-119w, ur td 4597 ft.

WASHAKIE — California Exploration Co., 31-48-89, straightening crooked hole at 2080 ft.

WESTON—Gose Syndicate, 28-47-65, casing trouble 4004 ft.

MONTANA

CARBON—Ohio Oil Co.'s N. P. 2, 11-7s-21e, dr 3880 ft.

CASCADE—Piegan et al, 36-20-3w, dr 1300 ft.

CUSTER—Montana Belle O. & G. Co., 28-8n-45e, no report.

GALLATIN—Calif. Co.'s Ringling 1, 35-5n-7e, re-dr 3098 ft, td 3108 ft.

GLACIER—Fulton Pet. 1, sw 22-36-1w, lcn. Kootenai O. & G. Co., sw 13-35-6w, sd at 300 ft.

HILL—Jones Oil Co.'s Brown Coulee 1, nw 32-34-14e, sd 1625 ft for winter.

LIBERTY—Square Deal Oil Co.'s Federal Land Bank 1, sw 1-32-7e, sd. Thompson's Thompson 1, 7-34-4e, sd 2175 ft. Northland O. & G. Co., 35-33-6e, sd for winter at 850 ft.

MUSSELSHELL — Minnesota-Flatwillow's Ivanhoe Dome 1, 7-11-31, sp in and sd.

PETROLEUM—Minnesota-Flatwillow 2, sw 5-12-25e, dd from 2500 ft. Oregon-Flatwillow Oil Co., 3-13-26, sd 200 ft.

PONDERA—Valier-Williams Oil Co., 7-29-4w, trying to shut off water, total depth 2481 ft. Prairie's N. P. 1, 9-10-39, sd 2310 ft. Prairie's N. P. 3, 26-10-39, dr 1960 ft.

ROSEBUD—Prairie O. & G. Co., 28-10n-38e, sd 65 ft. Prairie's N. P. 1, 9-10-39, shut in 2310 ft. Prairie 3, 26-10-39, fsh casing 2073 ft.

TETON—L. B. O'Neil, 16-25-5w, sd 2305 ft. Mitchener et al's Hondas 1, 9-23-1w, sd 1916 ft. Rocky Mountain O. & G. C.'s Salmond 1, ne 4-23-8w, sd 852 ft. Earl Oil Corp., 22-22-80, sd for winter 660 ft. Andover Oil Co.'s Carlson 1, ne 22-22-8w, sd 200 ft for winter.

TOOLE — Monalta Oil Co., Ltd.'s Buckley 1, se 1-37-4w, ur, td 2330 ft. Monalta Oil Co.'s Buckley 2, sw 1-37-4w, moving in. Anaconda Pet. Co., ne 19-36-2e, sd 1635 ft. Mahan et al's Lee 1, 10-31-1w, sd 2264 ft. International Royalty Holding Co.'s Henry 1, 26-35-3e, sd 1850 ft. Black Gold Pet. Co.'s Toole 1, nw 22-36-1e, Bradenheading gas at 1322 ft. Roxana Drilling Co.'s Toole 1, 22-36-1e, sd. D. A. McDonald's Farbo 1, ne 2-37-4w, dr 2010 ft. Cosmos Pet. Co.'s Thacker 1, se 2-37-4w, dr 1930 ft. Thomas' Buckley 1, ne 1-37-4w, to resume at 150 ft. Black Gold Pet. Co.'s Syrs 1, sw 30-36-28, location.

YELLOWSTONE — Montana Corp., 16-4n-26e, wtg orders at 2230 ft.

NEW MEXICO

CHAVES—Warman Oil Trust, 1, ne 27-13-24, dr 710 ft. Cactus Prod. Co.'s Sullivan 1, 14-10s-26e, dr 2000 ft.

DE BACA—Matador Oil Co.'s State 1, se 6-4n-20e, dr at 2725 ft. Pittsburgh Oil Co., 1, ne 16-1s-27e, sd 4506 ft. Transcontinental's McWhorter 1, 6-36-22, abandoning at 4770 ft.

GUADALUPE — Los Angeles-Hollywood Synd.'s McMullen 1, se 24-5n-66e, may skid.

LEA—Texas Prod. Co.'s State 1B, 1-21-33, dr 2396 ft. Texas Prod. Co.'s State 1A, 2-21-33, dr 3470 ft. Texas Prod. Co.'s State 2A, ne 2-21-33, dr 2300 ft. Empire Gas & Fuel Co.'s Closson 1, se 6-22-36, cem 3703 ft. Empire Gas & Fuel Co.'s State 3B, se 5-21s-35e, dr 4300 ft. Empire Gas & Fuel Co.'s Lindley 1, ne 26-35-36, dr 3200 ft. Conoco, State 1, 1-21-33, dr 3525 ft. Conoco's Myers 1, se 17-21-36e, running casing at 4001 ft. Conoco's Myer 1, nw 28-22s-36e, fsg 3765 ft. Conoco's State 2, 1-21-33, repairing at 617 ft. Shell Pet. Corp.'s Thorpe 1, 10-19s-38e, dr 3770 ft. Walker et al's Terry 2, se 10-19s-38e, ready to spud. Humble O. & R. Co.'s Lindley 3A, sw 13-25-36. Rector Oil Co.'s King 1, sw 27-35-32e, dr 3877 ft. Magnolia Pet. Co.'s Lindley 1, ne 26-25-36, dr in new

LONGER LIFE FOR STEEL LINE PIPE

The top half shows the mill scale magnified 10 times.

The lower portion shows the same pipe descaled and slightly roughened to grip and bind the protective coating to the pipe.

DESCALING

will lengthen the life of steel pipe line

To obtain a permanent bond you must have a clean surface for coating. This necessitates the complete and thorough removal of mill scale. For if this is not done, you are painting mill scale and not the pipe itself — and scale also stimulates further corrosion through electro-chemical action.

When you specify Chester *descaled* pipe, every particle of scale is removed and the pipe is given a priming coat before it leaves the descaling machine. You thereby obtain a perfect bond between the protective coating and the actual metal of the pipe — which insures years of extra service.

Further information and quotations gladly furnished on request.

Chester also makes all classes of Genuine Wrought Iron Tubular Goods

SOUTH CHESTER TUBE COMPANY — Chester, Pa.

DISTRICT SALES MANAGERS:

W. E. Gibson, 801 Columbia Bank Bldg., Pittsburgh, Pa.
H. A. Morse, 30 Church St., New York City
J. P. Cooney, 715-716 A. G. Bartlett Bldg., Los Angeles, Calif.
J. P. Steele, 305 Petroleum Bldg., Fort Worth, Texas

DISTRICT OFFICES:

Tulsa, Oklahoma—J. D. Swartz, 1231 S. Evanston St., Tulsa, Oklahoma
Houston, Texas—H. S. Chancey, 2108 Mills St., Houston, Texas
Wichita Falls, Texas—E. L. Moseley, 3114 Tenth St., Wichita Falls, Texas
District Warehouses: Houston, Texas; Thenard, Calif.

DISTRIBUTORS:

Pritchard Supply Co., Mannington, W. Va.
Mather & Waynesburg, Pa.
Le Valley, McLeod, Kinkaid Co., Inc., Elmira and Olean, N. Y.
Petroleum Supply Co., Houston, Texas, Norphlet, Ark.
Wagner Supply Co., Fort Worth, Cross Plains, Breckenridge, Iraan, Wink, Forsan and Odessa, Texas
United Pipe & Supply Co., Charleston, W. Va., and Paintsville, Ky.
United Oil Well Supply Co., 712 A. G. Bartlett Bldg., Los Angeles, Calif.
Great Northern Tool & Supply Co., Billings and Kevin, Mont.
Kemmerer and Cody, Wyoming
W. K. Henderson Iron Works & Supply Co., Shreveport, La.
Pelican Well Tool & Supply Co., Shreveport, La.

CHESTER

STEEL SPECIALISTS IN CASING FOR DEEP WELL DRILLING **CASING**

LINE PIPE

hole at 500 ft. Penn Oil Co.'s State 1, ne 21-19s-36e, dr 4245 ft. Bordage et al's Hughes 1, 27-19s-38e, stand 4012 ft. Morton et al's State 1, nw 32-11s-38e, dr 2315 ft. Barnsdall Corp., 1, 28-16s-38e, dr 2230 ft. Cranfills & Reynolds' State 2B, 2-21-33, testing at 3750 ft. Cranfill & Reynolds' Cushing 1, 23-24-36, gas 30 million at 3146 ft. Midwest's State 24, sw 10-19s-39e, dr 4115 ft. Midwest's Terry 3, se 10-19-38, dr 3220 ft. Midwest's Wright 6, sw 14-19-38, dr 1880 ft. Cranfill & Reynolds' State 3B, 2-21-33, dr 2420 ft. Amerada Pet. Corp.'s State 1, nw 1-21-33, dr 3960 ft. Snowden & McSweeney's State 1, sw 1-21-33, dr 2000 ft. Fisher & Lowrie's State 1, 11-18-36, standardizing at 2100 ft. Harrison et al's Tatum 1, sw 35-18s-38e, standardizing 490 ft.

McKINLEY—J. W. Halsell's Santa Fe 1, 17-19-8, dr 3077 ft. San Juan Coal & Oil Co., 1, se 21-18n-9w, sd 2205 ft. Williams et al's Santa Fe 1, se 19-18n-8w, fsg 1810 ft.

RIO ARRIBA—Barringer et al's Hartman 1, ne 8-29-7, prep to resume.

SAN JUAN—Dorothy Oil Co., 29-30-9, dr. Kutz Canon O. & G. Co.'s Day 1, 20-28-10, dr 1335 ft. Blackrock Oil Co., 1, sw 11-25-13, wtg on extension permit with to 1550 ft. Angel Peak Oil Co.'s Kutz Canon 1, 11-28n-11w, plug back to install rotary. Greathouse et al's Roderick 1, se 11-22-14, sd 1000 ft. Childers Dr. & Pr. Co.'s Westwater 2, 34-31-18, sd. Reserve Oil Co.'s Shaffer 2, ne 1-21-ur 730 ft, td 780 ft.

SAN MIGUEL — Pioneer O. & G. Co.'s Thunderbird 1, nw 14-15-16, dr 2225 ft. Starr Oil Co.'s Adams 1, ne 25-16-16, fsg 3279 ft. Cibola Pet. Co.'s Crow 1, se 19-13n-14e, td 320 ft. Hershfield Dev. Co.'s Cabra Springs 1, ne 21-12n-22e, td 920 ft. Benedict et al's Wilson 2, nw 25-17n-16e, ready to spud.

SOCORRO — Lockhart & Co., 14-3s-6e, dr 1825 ft.

TORRANCE—Williams et al's Staplin 1, ne 16-8n-10w, dr 1456 ft.

VALENCIA—Rio Puerco Oil Co.'s N. M.-Ariz. Land Co. 2, ne 13-6-2, wtg for pipe 3145 ft. Acme Oil Co.'s N. M.-Ariz. Land Co. 1, 26-6-3, dr 4650 ft. Harlan et al's Harlan 1, 5-6n-2e, dr 2796 ft.

NORTHERN CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
Standard Oil Co., K. C. L. 27.....	*	8406

KERN COUNTY—

BELRIDGE—Elmer Oil Co.'s No. 1, 2-29-20, making prod test, well making some oil, td 3970 ft. J. H. Kennedy's No. 1, 5-29-21, sr 850 ft. Keystone Pet. Corp.'s No. 1, 18-28-22., dr 3690 ft. K. C. Wallace's New 1, 32-29-21, dr shale 2514 ft.

BUTTON WILLOW—Milham Exploration Co.'s Kern 6, coring shale 4940 ft.

EDISON—F. M. Sayre's No. 1, 5-30-29, new lcn. The Texas Co.'s Newman 1, 23-29-28, dr shale 4450 ft.

GOULD HILLS—Bomke and Ball's Larson 1, 12-29-20, sd 2455 ft. Casa Mira Oil Co.'s Theta 1, 20-28-20, co 2660 ft.

JASMINE—Max McVey's No. 1, 23-25-27, lcn.

KERN RIVER—Kilmer and Abbott's Hibbard 1, 25-28-27, will deepen from 1200 ft.

McKITTRICK—Ohio's M. M. 1, 32-20-22, dr shale 1978 ft. H. L. Whiston's Wisecarver 1, 30-30-22, dr shale 3688 ft.

MIDWAY—Shell's Perris 1-A, 15-32-23, coring 7740 ft. Standard's Mascot 1, 26-32-23, dr brown shale 8235 ft. Texas' Gore 4, 21-31-22, dr shale 3132 ft.

MT. POSO—Agey Pet. Co.'s Agey 1, 28-27-27, dr 1955 ft.

MOUNTAIN VIEW—Shell's No. 1, 29-30-29, new lcn.

ROSEDALE—Elmer's Houghton 1-A, 33-29-26, dr hard sand 5238 ft. General Pet.'s K. C. L. 1, 13-29-26, surveying hole, td 5540 ft.

ROUND MOUNTAIN—Gerrard and Phillips' No. 1, 32-27-29, co 1420 ft. Homer Reardon's Craig 1, 32-28-29, sp.

SAN EMIDIO—Union's K. C. L. 2, 5-10-21, re-dr 3600 ft.

TEMBLOR HILLS—Shell's Gonyer 1, 32-32-23, plugged to 375 ft.

SANTA BARBARA COUNTY

ARLIGHT—Standard's Citrus 5, 10-22-22, dr shale 8435 ft.

ARROYO PARIDA—Shell's Fithian 1, 18-4-25, coring 1488 ft.

BUELL—Union's Buell 1, dr shale 2750 ft.

CARPENTERIA—Continental Oil Co. is doing validation work on following state permits: Bailard 127-1; Bailard 126-1; Bailard 129-1; Bailard 124-1; Bailard 125-1; Franklin 123-1; Higgins 121-1; Higgins 127-1; Hall 131-1; Hall 128-1. George F. Getty is doing validation work on following state permits: Casper 130-1; McDonald 120-1.

CASITAS—Standard's Shepard 1, 26-4-25, rigging up.

CASMALIA—H. B. Gorham's Paderewski 1, 33-10-34, dr shale 4522 ft. Wildcat Oil & Realty Co.'s Donovan 1, 20-10-35, coring 4118 ft.

GIBRALTAR DAM—Pacific Western's Dam 1, dr 2100 ft, formation withheld.

GOLETA—F. G. Anderson's Goleta 1, 10-4-28, 8⅝-in cas cmt 4528 ft, td 4672 ft. Carrey and Adams' Montechulo 1, 1-4-28, dr shale 2432 ft. Geenral Pet.'s Bank 133-1, sd 570 ft; Crandal 138-1, rig; James 136-1, rig; Parker 139-1, rigging up; Sands 137-1, rigging up; Moore 2, dr shale 3078 ft. Standard's Edwards 2, 13⅜-in cas cmt 1965 ft. L. B. Tannehill's Storke 1, dr shale 5005 ft. U. S. Pet. Corp.'s Permit 141-1, pier; Permit 142-1, lcn; Permit 143-1, rig.

LOMPOC—Ohio's Sal Si Puedes 1, 2-6-34, dr 200 ft.

ORELLA—General Pet.'s Erburu 2, lcn; Erburu 3, dr 240 ft. Oakburn Oil Co.'s Permit 168-1, pier; Permit 169-1, pier; Permit 170-1, sd 200 ft; Permit 171-1, lcn; Permit 172-1, pier. Shell's Covarrubias 1, cmt 10-in cas 1225 ft.

POINT CONCEPCION—Standard's Gerber 1, dr shale 3385 ft.

SAN MARCOS—California Oil Properties' Fortine 1, 3-4-28, dr 3970 ft.

SANTA BARBARA—Standard's Santa Barbara 1, 11-4-28, sd 2145 ft.

SANTA MARIA — O. C. Field's System-Bradley 1, deepening from 5070 ft. Shell's Careaga 1, coring 3445 ft.

VENTURA COUNTY

OJAI—Continental's Sulphur Mountain 3, 21-4-22, sr 5730. Gilmore-Bishop Pet. Co.'s Pirie 1, dr shale 2080 ft. M. K. T. Oil Co.'s No. 1, 13-4-22, dr shale 2982 ft.

OXNARD—Shell's Leonard 1, coring 1675 ft; Terry 1, coring 1400 ft.

PIRU—Bolsa Chica Oil Corp.'s Snow 1-A, 4-4-18, dr gray sand 1414 ft.

RINCON CREEK—Associated's Snowball 1, dr 165 ft.

SANTA PAULA—W. W. Bryant's Anlauf 4, 21-4-21, co 170 ft.

SATICOY—Standard's Citrus 5, 10-2-22, dr shale 8440 ft.

MISCELLANEOUS

FRESNO COUNTY—Petroleum Securities' Ladd 1, 28-20-16, dr gray sand 7316 ft. Currency Pet. Co.'s No. 1, 28-21-14, drilling 2835 ft. John Knudsen's No. 1, 14-21-14, dr shale 1414 ft. Western Gulf's Welch 1, 26-15-12, lcn.

KINGS COUNTY—H. B. Porter's No. 1, 9-24-17, re-dr 2340 ft.

MEDERA COUNTY—George G. Getty's Gill 1, 18-13-16, plugging back from 4633 ft.

MENDOCINO COUNTY—Twin State Oil Co.'s Soldani 1, 14-12-17, dr shale 1655 ft.

MONTEREY COUNTY — Standard's Pied mont 1, 23-22-7, dr shale 3212 ft. Union's Paige 1, 8-22-8, dr brown shale 2678 ft.

SAN LUIS OBISPO COUNTY—Panorama Oil Co.'s Panorama 1, 7-31-21, lowering 6¼-in cas, td 4010 ft, oil and gas showings in Vaqueros. Latin-American Oil Co.'s Upton 1, 31-27-15, dr shale 4108 ft. Midwest Oil Co.'s Hately 1, 34-31-15, re-dr, td 2212 ft. Pismo Dome Oil Co.'s Pricco 2-A, 5-31-13, dr shale 1100 ft; No. C-1, 5-31-13, fsh for tools 1105 ft. San Luis Synd.'s No. 1, 29-31-13, co 3140 ft. Texas Pacific Coal & Oil Co.'s No. 1, 25-32-14, sr 3850 ft. Union's Chandler 1, 12-32-14, dr brown shale 5135 ft. A. T. Jergins' No. 1, 31-31-13, rig.

TULARE COUNTY—Terra Bella Oil Co.'s Gardiner 1, 35-22-27, dr sand 480 ft.

SOUTHERN CALIFORNIA

BELLFLOWER — Clearwater Pet. Co.'s Candler 1, dr shale 3050 ft.

CALABASAS—J. W. Martin's No. 1, dr gray sand 970 ft. Olympic Pet. Corp.'s No. 1, rig.

COMPTON—California Well Drilling Co.'s Del Amo 1, co 8500 ft.

EL MONTE—Morgan West's Sing 1, co to bottom, td 1590 ft.

LA HABRA—R. C. Rucker's Grazide 1, 6⅝-in cas cmt 2910 ft, td 3275 ft. Union's Sansinena 1, dr shale 1900 ft.

NEWHALL—National Security Co.'s Shepherd 1, dr shale 522 ft. R. L. Rogers' No. 1, lcn. Southern California Drilling Co.'s Needham 2, 6⅝-in cas cmt 1505 ft, td 1510 ft. Yorke and Lockhart's Clampitt 1, dr shale 1355 ft.

NEWPORT—Mesa Pet. Corp.'s B. G. 1, testing above plug at 3500 ft. Oilwell Engineering Co.'s Interstate 2, pumping water and trace of oil, td 2800 ft.

PIRU—Coastline Oil Co.'s Mazie 1, sr 2375 ft. Consolidated Oil Co.'s Hammond 1, dr shale and sand at 766 ft.

POINT DUME—Raleigh Oil Co.'s Ridge 3, dr gray sand 3016 ft.

POMONA—Grimes-Girrard's No. 1, sp.

PUENTE—Brea Canyon Oil Co.'s Bierd 1, co 1125 ft. The State Co.'s Richfield 1, dr shale 3470 ft. Western Gulf's Diamond Bar 1, dr shale and sand 838 ft.

RICHFIELD—Southwestern Oil Co.'s Day 1, plugging to 3800 ft for test.

SEAL BEACH—Continental's Bryant 1, dr shale 5980 ft. Shell's Alamitos Land 1, dr hard sand and shale 4015 ft.

SOUTH LOS ANGELES—Burlingham Pet. Corp.'s Hardy 1, dr gray sand 2414 ft. William Diller's No. 1, dr shale 2180 ft.

TELEGRAPH CANYON—Union's Rimpau 1, dr shale 2232 ft.

TALBERT—Western Gulf's No. 12, dr shale 835 ft.

WILMINGTON—Archer Oil Co.'s Watson 1, dr shale 5252 ft.

RIVERSIDE COUNTY—Hemet Pet. Co.'s No. 1, co 3390 ft. Trabuca Oil Co.'s No. 1, dr gray sand 4228 ft.

SAN BERNARDINO COUNTY — Mahala Oil & Gas Co.'s No. 1, pumping water and trace of oil, td 4215 ft. Keck & Hall's Belyea 1, dr sand and shale 900 ft.

SAN DIEGO COUNTY—Borderland Exploration Co.'s No. 1, dr shale 1840 ft. McGregor Corp.'s Butler 1-A, fsh 560 ft. S. S. Turner's Baler 1, dr hard sand 2175 ft.

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
LINCOLN COUNTY—		
Pine Prairie O&G Co., Carter 1, 33-10-6	*	2176
UNION COUNTY—		
E. L. Chapman, Thompson 1, 4-17-15	*	2525

ASHLEY COUNTY — Ark. Fuel Oil Co.'s Crossett Lbr. Co. 1, 1-19-7, coring lime 2718 ft.

COLUMBIA COUNTY — L. E. Parker's Franks 1, 25-19-22, sd 2831 ft. La. Oil Ref. Corp.'s Green 1, 22-15-19, pumping sw show oil 2240 ft, td 2490 ft. Williams et al's Fullenwider 1, 12-17-22, lcn.

CLEBURNE COUNTY—Cosden Oil Co.'s Donithan Lbr. Co. 1, 19-9-10, straightening crooked hole 437 ft.

DREW COUNTY—McClintock & Goedke's Ogle 1, 33-13-5, m out of cas 1720 ft, sd in new hole 1810 ft, td old hole 2530 ft.

FAULKNER COUNTY—Gold Creek O&G Co.'s Stermer 1, 17-4-13, ta 3872 ft.

FRANKLIN COUNTY — Ozark Nat. Gas Corp.'s McElroy 1, 15-8-27, arr plug back, td 3100 ft.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-13-19w, sr 3388 ft.

GRANT COUNTY—Jones & Watkins' Meek 1, 5-4-11, ta 1400 ft.

JOHNSON COUNTY—Ark. La. Pipe Line Co.'s Patterson 1, 14-10-24, dr 1030 ft. Blackwell O&G Co.'s Wyver 1, 21-8-25, arr plug and perf, td 5360 ft.

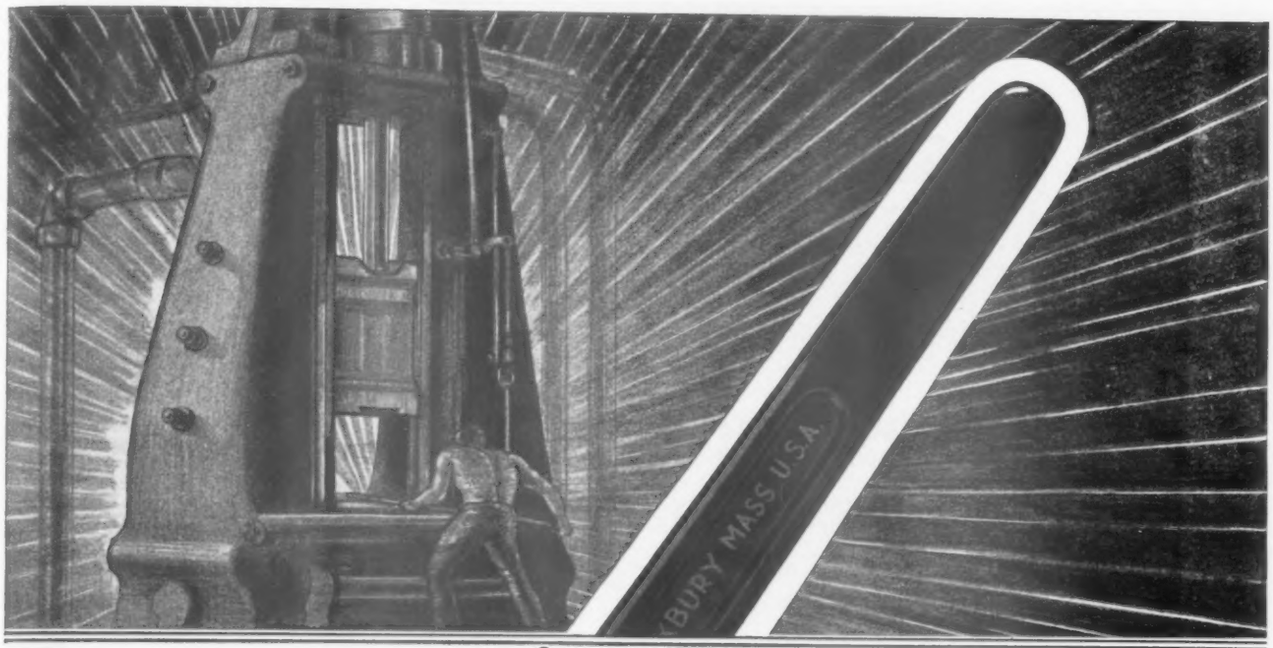
LAWRENCE COUNTY — Marguerite Dev. Co.'s Broadway 1, 31-17-1, lcn.

LINCOLN COUNTY — Pine Prairie O&G Co.'s Carter 1, 33-10-6, dry abn, td 2176 ft.

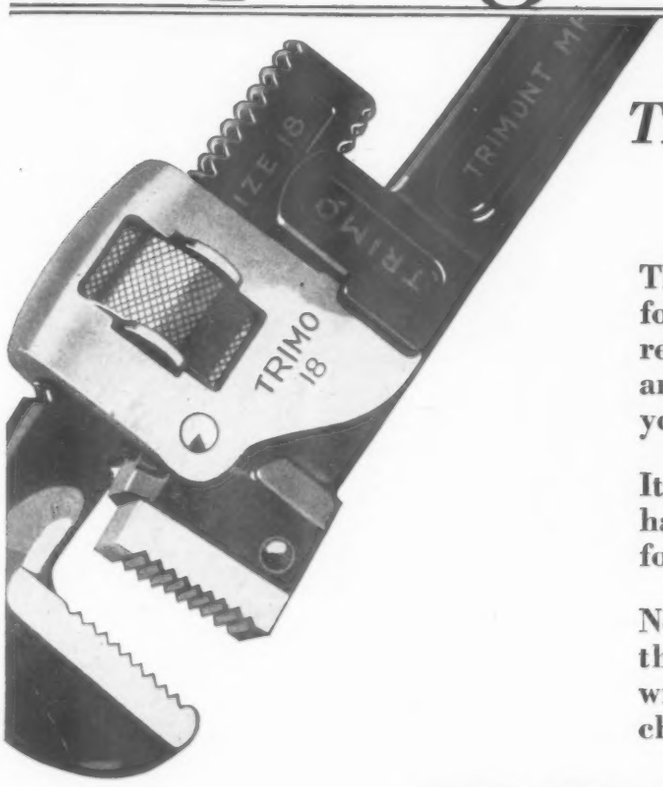
LITTLE RIVER COUNTY—Grote et al's Allen 1, 31-12-31, ta 2941 ft. C. F. McDonald's Black 1, 12-13-29, sd 1820 ft. Buck Oil Co.'s Taafe 1, 23-21-32, cored sand 2030-34 ft, wo 2042 ft.

NEVADA COUNTY — Ray Davis et al's Henry et al 1, 10-12-20, dk.

OUACHITA COUNTY—Copenhaver et al's Warnick 1, 2-15-17, ta 2190 ft. Artex Oil Co.'s Smith 1, 31-15-17, coring blue gummy shale



Drop Forged---*Not Cast*



-----another reason why TRIMO is an exceptionally good pipe wrench

The handle of all steel TRIMO is drop forged not cast. It is a good point to remember when picking a pipe wrench—and a satisfactory thing to know when you put all your strength behind the pull.

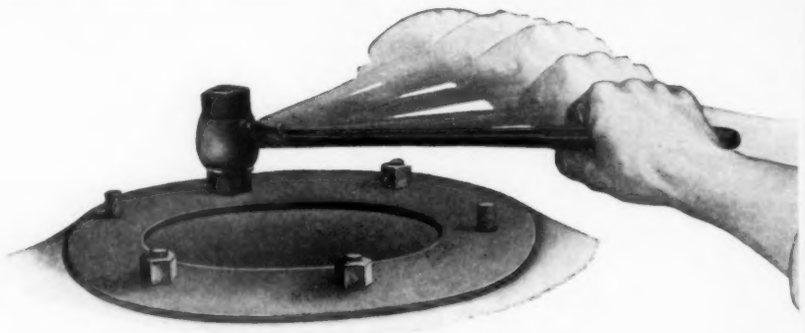
It would be easier for us to make the handle of cast iron, but it would be easier for you to snap that handle in two if we did.

No pains are spared to make TRIMO the safest, strongest, longest living wrench on the market. It is the right choice for any job in the oil fields.

TRIMO

TRIMO
Pipe Wrench

Made by Trimont Mfg. Co., Inc., Roxbury (Boston), Mass.



With the Rapid Gliding Motion of its Ratchet Considerable Time is Saved in Nut Turning by Using the

FAVORITE REVERSIBLE RACHET WRENCH

which does not leave the nut until seated or removed.

Does not slip off the nut.

Contrast this with the old-fashioned open end wrench that has to be removed at every part turn to get a fresh hold on the nut, and is forever slipping.

THE "FAVORITE" IS A TIME-SAVING TOOL

Write to us for particulars.

Greene, Tweed & Co.

Sole Manufacturers

109 Duane St. New York

BUILT STRONG
FOR
ROUGH USAGE.

BRONZE TO BRONZE

Is the Reason

DART UNIONS

Give Service
Try them

E. M. Dart Mfg. Company

PROVIDENCE, R. I.

The Fairbanks Company
Distributors

2752 ft. Magnolia Pet. Co.'s Grayson 1, 21-15-19, lcn.

PIKE COUNTY—Theo. Davis, Tr.'s Ruth Wilson 1, 25-5s-26w, sd 718 ft.

POPE COUNTY—Cosden Oil Co.'s Mo. Pac. R. R. 1, 13-9-19w, fsh for tools 750 ft.

PRAIRIE COUNTY—Transcontinental Oil Co.'s Novack 1, 36-2-6, set 8¼-inch cas 2058 ft, dr 2435 ft.

SEBASTIAN COUNTY—Lavaca O&G Co.'s Cason 3, 21-8-30, dk; J. O. Ingram 7, 22-8-30, dr 2700 ft. A. G. Williams, Jr.'s, Patterson 1, 27-8-30, lcn.

ST. FRANCIS COUNTY—Brownlee Drilling Co.'s Whitted 1, 28-4-1, sd 300 ft.

UNION COUNTY — Frank Staples' Ainsworth 1, 8-19-16, sd for fuel 2005 ft. C. E. Murdock's Gallagher & Nelson 1, 18-18-17, cored gummy shale 2268-2274 ft, wo. Lion O&R Co.'s McDuffie 1, 32-19-16, coring lime 4090 ft. O. W. Estes' Telford 1, 35-17-15, set 6⅝-inch cas 2130 ft, set liner 2230 ft, 800 ft oil in hole, bailing, td 2230 ft; Felsenthal 1, 2-18-15, sd wo 2191 ft. E. L. Chapman's Thompson 1, 4-17-15, sw, abn, td 2525 ft. Marine Oil Co.'s Thompson A-3, 10-18-13, sd repr rig, td 3505 ft. Modisett Drilling Co.'s Union Sawmill 2, 14-18-14, set 6⅝-inch cas 2193 ft, set liner 2238 ft, 1800 ft fluid in hole, 10 per cent sw, td 2238 ft. Oil Well Corp.'s Union Sawmill 1, 10-19-14, dr 1350 ft. E. G. Bradham's Craig 1, 6-18-15, set 6-inch cas 2080 ft. H. L. Hunt's Pratt 6, 7-18-15, cemtd 8¼-inch cas 2150 ft, will drill in with cable tools. Wisinger & Ball's Lacey 1, 6-18-15, rig up. Al-Cal Oil Corp.'s Haney 1, 1-17-16, rig up.

WASHINGTON COUNTY—Lincoln Lease Holding Co.'s Townsite 1, 30-15-32, sd repr rig, td 1050 ft. C. H. Willoughby's Jones 1, 34-16-30, sd 1900 ft. O'Hara & Shetterley's Boyd 1, 12-16-32, sd 150 ft.

WHITE COUNTY—Letona Synd.'s Letona 1, 35-9-8, caving shale, 3500 ft.

VAN BUREN COUNTY — J. S. Martin's Scanland 1, 5-9-13, sd 50 ft.

OKLAHOMA

WOODS COUNTY—T 28n, R 16w, Sec. 23, Peerless, Cromwell 1, c nw ne, dr 2200 ft.

GRANT COUNTY—T 28n, R 7w, Sec. 27, Gypsy, Bilderback 1, se, show oil and gas 4058-65 ft, corcd 4250-65 ft and 4868-89 ft, standrdy 5081 ft. T 28n, R 4w, Sec. 12, Boucher et al, Dedmon 1, swc se, hfw 3105-30 ft, dr 4675 ft, show gas 4665 ft.

WOODS COUNTY—T 27n, R 16w, Sec. 33, Sinclair, Share 1, c ne sw, show oil 5405-15 ft, water 5460-65 ft, show gas 5600-15 ft, td 5835 ft to rerun 6-inch.

ALFALFA COUNTY—T 27n,R 11w, Sec. 12, Smith Brothers' Forbes 1, nec se nw nw, sd 1420 ft.

GRANT COUNTY—T 27n, R 5w, Sec. 20, J. V. Bailey's Brewer 1, c sw se, r.o.g., sd

HARPER COUNTY—T 26n, R 24w, Sec. 14, Sinclair, Howell 1, c sw sw, fshg 6161 ft.

GRANT COUNTY—T 26n, R 3w, Sec. 23, Otstot Dev. Co.'s Tapor 1, nec se, dr 2730 ft.

KAY COUNTY—T 26n, R 2e, Sec. 32, J. A. Vincent et al's McNeal 1, nwc ne, sd 2795 ft.

WOODS COUNTY—T 25n, R 15w, Sec. 10, Bu-Vi-Bar et al's Fee 1, sec sw, sd 6055 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden's Vollmen 2, nec se ne sw, lost tools 5640 ft, sd.

WOODWARD COUNTY — T 24n, R 17w, Sec. 32, Otstot, Simmons 1, sd 1500 ft, (lcn se cor).

WOODS COUNTY—T 24n, R 13w, Sec. 18, Miller et al, Copenhaver 1, swc, spd and sd.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, J. V. Bailey et al, Acre 1, c sw ne, water 4638-40 ft, 8-inch at 4660 ft, r.u.s.t.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer, White 1, sec nw, hfw 4730-4800 ft, td 556 ft, ur 5-inch.

WOODWARD COUNTY — T 23n, R 20w, Sec. 9, Harris & Haun, Wyatt 1, c se, sfw 4390-4400 ft, dr by 4968 ft.

NOBLE COUNTY—T 22n, R 1e, Sec. 22, Peerless et al, Wentz 1, nwc sw, hfw 1938-53 ft, Layton 3279-82 ft.

WOODWARD COUNTY — T 21n, R 21w, Sec. 25, Sharon, Elmore 1, swc, rig blown down, sd 3025 ft. T 21n, R 19w, Sec. 15, Burgoyne Bros., Merklin, swc se ne, sd 1910 ft.

MAJOR COUNTY—T 20n, R 14w, Sec. 23, Keller et al, Horton 1, c ne ne, spd and sd.

GARFIELD COUNTY—T 20n, R 4w, Sec.

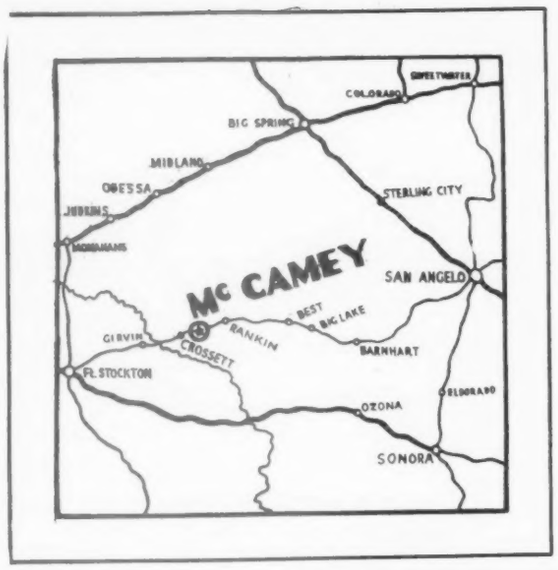
McCamey, Texas, Area

McCamey field, Upton County, Texas, was opened for commercial production by Johnson-McCamey, independent operators, and Marland Oil Company's Baker 1 wildcat, September 30, 1925, extending the producing territory of the West Texas Permian Basin westward and creating one of the leading operating campaigns to that time in the history of Texas oil.

Baker 1 produced 70 barrels of 27-30 gravity crude from a total depth of 2271 feet. Elevation of the location is 2613 feet, top of the salt was encountered at 590 feet and the top of the lime found at 2083 feet.

The discovery holdings of the successful wildcatters was later sold to Republic Production Company, which developed offset locations for some of the leading West Texas producers known prior to Yates field and Winkler County flush discoveries.

This discovery, outside of resulting in intense development of the immediate area, caused further wildcatting in surrounding territory, leading to the opening of the Church and Fields pool.



C. W. FILE, Our Man at McCamey

McCamey field lies just north and slightly west of the Yates field, while the Church and Fields pool lies northwest of the McCamey field, being bordered on the Upton and Crane County line. McCamey pools afford a link in a "dog-leg" line of production from Yates field to the Jal field of Lea County, Southeastern New Mexico.

The Crane-Upton County production, making up the McCamey district, is now approximately 44,000 barrels daily. This area produced 15,123,150 barrels of crude during the first half of 1929.

AXELSON MACHINE COMPANY
Sucker Rods, Pull Rods, Working Barrels, etc.

BEAUMONT IRON WORKS COMPANY
Dreadnaught Rotary Drilling and Pumping Equipment.

DONOVAN BOILER WORKS
Oil Country Boilers and Tanks.

FRICK-REID SERVICE RUBBER BELTING
Our Own Specifications.

JONES & LAUGHLIN STEEL CORPORATION
Tubular Goods, Seamless and Lapwelded.

NATIONAL TRANSIT PUMP & MACHINE COMPANY
Pumps and Pipe Line Equipment

WM. POWELL COMPANY
Valves for the Oil Industry

J. P. RATIGAN
"Sure-Grip" Line of Pumping Equipment.

JOS. REID GAS ENGINE COMPANY
Two and Four Cycle Gas Engines, Pumping Powers, Refinery Equipment.

JOHN A. ROEBLING'S SONS COMPANY
Wire Line and Welding Wire.

ROSSENDALE-REDDAWAY COMPANY
"Camel Hair" and Stitched Canvas Belting.

WALWORTH COMPANY
Fittings and Valves for all Branches of the Oil Industry.

WHITLOCK CORDAGE COMPANY
Manila Cordage, including Drilling Cables, Bull Ropes, Cat Lines, etc.

FRICK-REID
SUPPLY CORPORATION
Pittsburgh ..... Tulsa ..... and Branches

10, Continental et al, Brown 1, cel ne nw sw, dr 3600 ft.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, Washoma Pet. Co., Phillips 1, c nw sw, sd 2945 ft.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Healy et al, Quir 1, sec sw, sd 3970 ft.

KINGFISHER COUNTY — T 16n, R 7w, Sec. 6, Gault-Brown, Boch 1, c nw se, (owdd) cored 6022 ft, sd.

CANADIAN COUNTY—T 14n, R 6w, Sec. 9, A. D. Spears, Piatt 1, swc nw, sd 3223 ft.

TEXAS COUNTY—T 1n, R 15e c. m., Sec. 25, Skaer et al, Hitch 1, nwc, sd 250 ft.

LINCOLN COUNTY—T 17n, R 4e, Sec. 4, Wheeler & Mote, Funnell 1, nec se, fish 600 ft. T 17n, R 5e, Sec. 16, Ed Jilson & Kemp, School Land, sec sw, dr 785 ft. T 13n, R 6e, Sec. 21, Shell Pet., Pharris 1, nec nw, show oil 4125-32 ft r.u.s.t. T 12n, R 3e, Sec. 29, Phillips Pet., Robinson 1, sec nw, 8-inch at 5100 ft, dr 5660 ft.

OKFUSKEE COUNTY—T 12n, R 9e, Sec. 36, Henry Oil Co., Harjo 1, nwc, td 2785 ft, csg collapsed. T 12n, R 10e, Sec. 3, Sheppard et al, Shepard 1, sec nw sw, top Wilcox 3638 ft, set 5-inch 3660 ft.

SEQUOYAH COUNTY—T 12n, R 23e, Sec. 12, Hunt et al, Raph 1, swc, sd 1320 ft.

MUSKOGEE COUNTY—T 11n, R 19e, Sec. 21, E. Mills et al, Martin 1, nwc se, sd 1001 ft.

McINTOSH COUNTY—T 10n, R 14e, Sec. 31, Jennings Bros., Crabtree 1, sec nw sw, 1M gas 960-80 ft, sd 3330 ft.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al, McDuff 1, swc nw se, wx 5443-5511 ft, show oil 5446-70 ft, 1M gas 5464-80 ft, fshg tools and csg 5560 ft.

HASKELL COUNTY—T 9n, R 18e, Sec. 10, Marion Company, Sanders 1, nwc ne sw, 2M gas 1800 ft, sd 2692 ft.

LATIMER COUNTY—T 7n, R 22e, Sec. 36, J. S. Cochran et al, Cushing 1, nw se se, sd 2100 ft. T 6n, R 22e, Sec. 23, Limestone O. & G. Co., Shaw 1, nwc ne nw, sd 1330 ft.

OKLAHOMA COUNTY—T 13n, R 1w, Sec. 13, Tom Slick, Inc., Martin 1, c nw nw, 6-inch at 6655 ft, td 6960 ft. T 13n, R 3w, Sec. 35, Magnolia-Ramsey, Johnson 1, ne ne sw, dr 3342 ft. T 12n, R 3w, Sec. 30, Magnolia, Noble 1, nwc sw sw, td 6844 ft. T 11n, R 2w, Sec. 3, Ryan Consol. Co., Lawton 1, nec nw, fish 3600 ft.

HUGHES COUNTY—T 9n, R 8e, Sec. 12, Magnolia, Brown 1, sec ne, dr 2204 ft. T 9n, R 12e, Sec. 29, Canady et al, Kanard 1, sw nw nw, fish 2175 ft.

POTTAWATOMIE COUNTY—T 8n, R 4e, Sec. 30, Keister & Manning, Rowlett 1, sw se ne, dr 3270 ft.

SEMINOLE COUNTY—T 8n, R 5e, Sec. 23, Gypsy et al, Bruner 1, nec se nw, dr 3280 ft. Sec 26, Continental et al, Harjo 1, nwc se, 8-inch at 4071 ft.

CLEVELAND COUNTY—T 6n, R 1e, Sec. 20, Harris & McNeil, Corbett 1, c sw ne, rig.

POTTAWATOMIE COUNTY—T 6n, R 3e, Sec. 22, Payne drlg. Co., Bullock 1, se se ne, dr 3827 ft. Sec. 36, Sykes et al, Cook 1, sw nw ne, rig.

SEMINOLE COUNTY—T 6n, R 8e, Sec. 31, Magnolia, Reed 1, nec se nw, rig.

HUGHES COUNTY—T 5n, R 10e, Sec. 30, Irwin et al, Jones 1, sec ne, rig on ground. T 5n, R 11e, Sec. 15, J. J. Wright, Roberts 1, sec sw, r.u.s.t.

PITTSBURG COUNTY—T 4n, R 12e, Sec. 32, Kerr & Key, Tall 1, c nw nw, dr 3350 ft.

ROGER MILLS COUNTY—T 12n, R 24w, Sec. 23, Bucy & Stone, Williams 1, c sw, rigging up. T 11n, R 26w, Sec. 4, L. C. Hivick, Davis 1, c nw ne, dr 2150 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey, Robinson 1, c ne nw, sw 150 ft.

BECKHAM COUNTY—T 8n, R 22w, Sec. 20, Carson et al, Denby 1, swc se ne, sd 1700 ft.

GREER COUNTY—T 6n, R 24w, Sec. 17, I.T.I.O. and Becker, Fee 1, c ne, dr 1905 ft. Sec. 23, Helmerick & Payne, 1, c nw nw, td 2210 ft, sd.

CADDO COUNTY—T 6n, R 13w, Sec. 8, Abernathy and Brown, Horton 1, sec, sd 580 ft.

COMANCHE COUNTY—T 3n, R 9w, Sec. 3, Oklahoma Nat. Gas Co., Doebel 1, ne sw sw sw, rigged up and sd.

STEPHENS COUNTY—T 2n, R 8w, Sec. 30, Smith & Nash, Johnson 1, nec, sd 1004 ft. T 3s, R 9w, Sec. 22, Pelwin Oil Co., King 1, (owdd) swc se, r.u.r. old td 3180 ft. T 3s, R 8w, Sec. 11, Twin State, Davidson 1, sec, dr 4330 ft.

JEFFERSON COUNTY—T 5s, R 7w, Sec. 11, H. W. Lee, Hotubbi 1, (owdd) sec nw, td 2513 ft, to deepen.

McCLAIN COUNTY—T 5n, R 3e, Sec. 16, Homaokla, Newsome 1, sec ne ne, sand 3582-87 ft.

JOHNSTON COUNTY—T 1s R 7e, Sec. 29, Smith-Kinsley, Lane 1, sec nw, sd 2254 ft, D. & A.

ATOKA COUNTY—T 3s, R 10e, Sec. 18, Brookshire et al, Guinn 1, nwc, sd 80 ft.

CARTER COUNTY—T 4s, R 2e, Sec. 32, Tex-Okla. Drlg. Co., Anderson 1, sec ne se, fshg 1980 ft.

MARSHALL COUNTY—T 5s, R 5e, Sec. 17, Jordan et al, Penn Mutual Life Ins., Co., nwc ne se, sd 700 ft.

BRYAN COUNTY—T 9s, R 9e, Sec. 36, W. C. Endicott et al, Craig 1, c nw ne, 1800 ft, sd.

WOODWARD COUNTY — T 23n, R 17w, Sec. 23, The Prairie and Trancontinental, Wilbur 1, ne, dr out cement 5916 ft.

CLEVELAND COUNTY — T 10n, R 2w, Sec. 8, Prairie, Slick and Phillips, Sudik 1, c ne ne, dr 7636 ft.

KANSAS

STEVENS COUNTY—Trees Oil Co.'s Candy 1, sw ne sw 3-35-38w, sandy lime 2615-2780 ft, est 11M gas, on fire.

SUMNER COUNTY — Davidson et al's Strickland 1, sw se, 12-35-1w, rig.

STEVENS COUTY — W. Sidwell et al's Kelly 1, sw ne 16-34-38w, sd 1600 ft.

BARBER COUNTY—Skelly's Temple Ranch 1, sw ne 13-34-15w, sd 4463 ft.

SUMNER COUNTY — Morgan and Carey Kawkins 1, sw se 9-34-1e, td 3670 ft, cementing tools.

COWLEY COUNTY — Edenfield & Fair's Wallace 1, cwl ne 17-34-4e, 2M gas 365-75 ft, sd.

STEVENS COUNTY—McKenna et al, Unknown 1, c nw nw 29-33-36w, 6½M gas 2620-2760 ft, td 2790 ft, 8M gas completed.

SUMNER COUNTY—Shell's Armstrong 1, nec 12-33-1e, hfw 3814 ft, td 3817 ft, siliceous lime, plugging back.

SEWARD COUNTY—Maugle's Younger 1, c se nw 24-32-39w, spudded and sd. Argus Gas Co.'s Hobble 1, c se 27-32-37w, sd 520 ft.

BARBER COUNTY—Robertson et al's Powell 1, c se se 11-32-10w, td 3650 ft, running 8-inch cas.

COWLEY COUNTY—Fine et al's Brown 1, sec 8-32-4e, dr 980 ft.

HARPER COUNTY—Beeler et al's Bear 1, c nw 21-31-6w, sd 440 ft.

SUMNER COUNTY—Kingwood's Stayton 1, c ne 18-31-2w, dr 3650 ft. Taylor & Payne's McCutcheon 1, c ne sw se 12-31-2e, dr 611 ft.

COWLEY COUNTY — Milton & Mead Brothers' Tatum 1, se sw 11-31-6e, sd 1920 ft. Roth & Farrount's Thompson 1, ne se 31-31-8e, 100 ft oih 1975-78 ft, lime 1991-2004 ft, swabbed 80 bbls, sd for orders.

SUMNER COUNTY—Hatfield et al's Dauber 1, nec 18-30-1w, spudded and sd. Lario et al's Osborne 1, ne se 20-30-1w, fsh 3300 ft.

COWLEY COUNTY—Prairie Leighty's Ball 1, sw se 4-30-5e, dr 2420 ft.

ELK COUNTY — Empire & Arkansas Fuel's Record 1, c nw ne se 32-30-10e, td 1603 ft, fsh cas.

PRATT COUNTY—Jones & O'Haver Lunt 1, csw nw 15-28-14w, td 4743 ft, fsh.

KINGMAN COUNTY — D. P. Fleeger's Ashbraft 1, 16-28-7w, dr 4005 ft.

SEDGWICK COUNTY—Marland & Amerada's Sensroth 1, nw c 25-28-4w, base lime 4082 ft, dr 4100 ft. McCulloch's Buckles 1, nw se 3-28-1w, fsh 1115 ft. La Font et al's Carlton Bros. 1, c se se nw 24-28-1e, sd 1685 ft.

BUTLER COUNTY—Stroub-Dutton et al's Kebby 1, se sw sw 12-28-3e, top lime 2695 ft, base lime 2870 ft, Viola 2957-63 ft, green shale 2963-68 ft, hfw 2958-73 ft, sd 2983 ft.

FORD COUNTY—McNabb et al's Unknown 1, c se 26-27-22w, sd 400 ft.

KINGMAN COUNTY—White Eagle et al's Lorenz 1, c ne sw se 25-27-5w, top chat 3745 ft, td 3774 ft, ur 8-inch cas 3737 ft.

BUTLER COUNTY—Martin et al's Flanigan 1, c sw se sw 29-27-3e, sd 1930 ft.

GREENWOOD COUNTY — F. Konkay et al's Rock 1, ne nw ne 7-27-12e, setg 10-inch cas 400 ft.

PRATT COUNTY—Skelly's Johnson 1, ne sw 21-26-17w, dr 2860 ft. Wilcox's Unknown 1, sw nw 7-26-15w, td 1360 ft, cas trouble. O'Haver & Jones' Careke 1, c ne sw 7-26-14w, hfw 2610 ft, dr 3270 ft.

RENO COUNTY—Wilson et al's McPheeters 1, cs½ nw, 22-26-8w, ur 8-inch cas 3225 ft.

SEDGWICK COUNTY — Travender et al's McLean 1, se sw se 23-26-1w, spudded and sd.

BUTLER COUNTY—Shell's Harper 1, sw ne 35-26-3e, spudded. Lario's Miller 1, ne se ne 36-26-3e, 6-inch cas 2997 ft, co.

HODGEMAN COUNTY — Swain et al's Kenthorne 1, c nw 21-25-24w, sd 390 ft.

EDWARDS COUNTY — Dixie-Amerada's McCarty 1, sw 22-25-17w, dr 2615 ft. Barnsdall's McCarty 1, nw ne 31-25-17w, dr 2010 ft.

SEDGWICK COUNTY — Empire's Bilta 1, ne nw 36-25-4w, hfw 3720 ft, dr 3885 ft.

GREENWOOD COUNTY—Ward McGinnis' Henley 1, sw ne 23-25-9e, ru, machine.

RENO COUNTY—Skelly, Birkett 1, ne sw 30-24-7w, td 4137 ft, fsh.

HARVEY COUNTY — Independent & Reserve's Moulds 1, c ne 7-24-1w, dr 3810 ft. Jolly & Ogg's Randall 1, ne c, 11-24-1w, hfw 3448 ft, 50 ft, dry and abn. E. W. Marland's Neiman 1, c ne se ne 8-24-3e, dr 2890 ft.

STAFFORD COUNTY—Gibson et al's Mueller 1, c sw 11-23-14w, hfw 2420 ft, td 2525 ft, fsh csg.

HARVEY COUNTY—Liggett's Regier 1, c se nw se 2-23-2w, hfw 3295 ft, dr 3315 ft. McCulloch's Prouty 1, nw sw 3-23-1w, sd 3501 ft, sd 3501 ft. Jolly & Ogg's Hupp 1, se ne 22-23-1w, sd 3220 ft, abn. Margaret Gay Oil Co.'s Grouse 1, nw ne nw 29-23-1w, sd 3360 ft.

BUTLER COUNTY—Valley Osage's Sirs 1, sec 34-23-3e, sd 2600 ft.

HODGEMAN COUNTY — Phillips' Housman 1, c nw ne 30-22-22w, show oil and hfw 4520-34 ft, ur 6 -inch

RENO CONUTY—Witt et al's Olsen 1, se nw 14-22-6w, td 2010 ft, cas trbl.

HARVEY COUNTY—Superior's Regier 1, se nw 11-22-3w, dr 2685 ft. Cross et al's Fesson 1, sw ne 33-22-14e, td 1730 ft, dry and abn.

RENO COUNTY—Burgher's Fair 1, c se ne ne 14-21-10w, running 10-inch cas 1700 ft

HOTEL BRISTOL

129 WEST 48TH STREET
NEW YORK

Most conveniently located—only a few minutes walk to all shopping and amusement centers—yet quiet

Famous Table d'Hote Restaurants
Luncheon 50c—Dinner $1.00
Also a la Carte Service
Room, Single $2.00—Double $3.00 Per Day
with
Bath, Single $3.00—Double $5.00 Per Day

ANNOUNCING—

OUR NEW PLANT at
3433-3443 Cherry Ave.
Long Beach, California

With our constant improvement of weight recording, measurement and control instruments it is only fitting that our facilities for manufacturing and service improve. We take pleasure in announcing our new plant and also the

CHANGE
OF NAME

from

MARTIN LOOMIS CORP. TO

Martin-Decker Corp.

3433-3443 Cherry Ave.—Long Beach, California

WEIGHT RECORDING, MEASUREMENT AND CONTROL

OVER 18 FEET PER HOUR WITH APPLEMAN BITS!

SPEED has made the APPLEMAN GUMBO BIT one of the most economical ever manufactured. McLean No. 19 was drilled to 4718 feet in 254 hours, making an average of over 18 feet per hour. 33 APPLEMAN GUMBO BITS were used with an average of 7 hours 41 minutes per bit and 143 feet per bit.

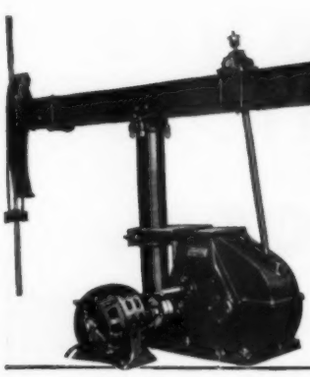
Note that straight water courses lead direct to cutting edges allowing maximum cooling effect and breaking up cuttings rapidly. This means NO CHOKING UP.

The SELF-SHARPENING feature of this bit makes for longer life and a larger and cleaner hole. Reaming is rarely necessary in the APPLEMAN BIT. Less labor and less expense.

B. K. APPLEMAN
BEAUMONT, TEXAS
(Patent Applied for)

THE SIMPLEST CLAMP WITH GREATEST GRIP!

ACME B·&R·
One of the 148 types of Drilling and Fishing Tools made by
ACME FISHING TOOL CO·
at Parkersburg W·Va·
ESTABLISHED *in* 1900
Distributors and Dealers in all active fields



AMERICAN
AURORA, ILL.

Ask for catalog on American Pumping Units, showing sizes for various depths and capacities of wells.

C. S. Carter,
Sales Representative
Mid-Continent Bldg.,
Tulsa, Oklahoma

Wm. Pierce,
Sales Representative
701 Elm St.,
Dallas, Texas

THE AMERICAN WELL WORKS
General Offices AURORA, ILLINOIS and Factory

Boucher et al's Boy 1, swc 16-21-10w, sd 1925 ft.

McPHERSON COUNTY—McCulloch's Cornelius 1, swc 7-21-4w, sd 3230 ft. McPherson's Fisk 1, sw ne ne 15-21-2w, sandy lime 3416-19 ft, show oil and hfw, Wilcox 3455-70 ft, hfw 3565 ft, sd 3585 ft.

LYON COUNTY—F. A. Bailiere's McKee 1, sw ne 32-21-11e, machine, ru.

RUSH COUNTY—Prairie's Black 1, sw nw ne 11-20-18w, dr 2160 ft.

RICE COUNTY—Miller & Detrick's Shumway 1, c sw 2-20-9w, show oil hfw 2925-85 ft, dr 3577 ft. McCulloch's Williams 1, c ne 35-20-8w, rog. Derby's Johnson 1, c nw ne se 24-20-6w, dr 2580 ft.

McPHERSON COUNTY—Millmack's Decker 1, nwc 11-20-3w, td 1500 ft, skidded rig, now ru. Reynolds Koehn 1, ne se ne 15-20-2w, base lime 3220 ft, dr 3355 ft.

CHASE COUNTY — Steinbushel et al's Stephenson 1, ne sw 4-20-6e. dr 530 ft. Empire's Newman 1, se ne 24-20-9e, dr 1600 ft.

RUSH COUNTY—Danciger O. & R., Pinonka 1, c ne sw ne 17-19-17w, hfw 4135-45 ft, td 4148 ft, dry and abn. Danciger's Bell 1, c sw 16-19-8w, sd 2165 ft.

RICE COUNTY—Millmack's Cain 1, se 29-19-7w, hfw 3602-10 ft, sd 3700 ft.

McPHERSON COUNTY—Transcontinental's Algers 1, ne sw 1-19-5w, td 3916 ft, ur 6-inch casing.

MARION COUNTY—Empire's Black 1, c ne nw sw 27-19-2e, ru. Marshall et al's Higgins 1, nec 33-19-5e, rig.

CHASE COUNTY—Steinbushel et al's Cook 1, sec lot 27, 31-19-8e, dr 600 ft.

LANE COUNTY—Robinson et al's Dickerson 1, swc nw se 11-18-27w, sd 2625 ft.

RUSH COUNTY—Millmack's Mohr 1, c nw 11-18-16w, spudded and sd.

RICE COUNTY—Tatlock et al's Plcog 1, c sw se 33-19-9w, rog.

McPHERSON COUNTY — McPherson Oil Dev. Co.'s Sorenson 1, c se 23-18-2w, hfw 3460-63 ft, Viola, td 3475 ft, Wilcox 3535-90 ft, hfw 3602 ft, sd .

CHASE COUNTY—E. W. Marland's Altenmus 1, se ne 33-18-8e, dr 2550 ft.

BARTON COUNTY—Slick et al's Sweeney 1, sw ne 23-17-11w, sd 2410 ft.

ELLSWORTH COUNTY — Tatlock et al's Sacken 1, c sw se 25-17-9w, dr 1525 ft.

McPHERSON COUNTY — Dixie's Johnson 1, swc 20-17-3w, sd 1445 ft. Galt-Brown et al's Zeitlow 1, c ne se se 7-17-1w, ru.

MARION COUNTY—White Eagle et al's Ucker 1, ne nw 24-17-2e, dr 3175 ft, hfw.

LYON COUNTY—Gordon & Stats' Proche 1, c ne se nw 16-17-10e, sd 1400 ft.

BARTON COUNTY — Allison & Fitzwilliams' Brodie 1, nec 19-16-12w, dr 3360 ft. Prairie's Davidson 1,nw se 4-16-11w, rog.

DICKINSON COUNTY—Prairie & Phillips' Rumold 1, c nw sw ne 12-16-2e, dr 1400 ft. Hiatt & Durham Went 1, nwc 17-16-2e, spd.

MORRIS COUNTY—Urschell et al's Scott 1, ne sw 6-16-6, sd 400 ft.

TREGO COUNTY—Prairie's Kutina 1, c ne sw ne 29-15-21w, td 3675 ft, running 6-inch cas.

ELLIS COUNTY — Rush Oil Co.'s Gatewood 1, 4-15-20w, sd 2555 ft.

ELLSWORTH COUNTY — Templeman's Lanbangagen 1, c sw 20-15-5w, dr 3655 ft.

SALINE COUNTY—Austin's Olsen 1, c nw sw se, 10-15-4w, sd 3690 ft.

DICKINSON COUNTY—Cress et al's Sandon 1, nec 12-15-2e, rig.

TREGO COUNTY — Dixie & Amerada's Reitmeyer 1, c ne ne 19-14-21w, sd 850 ft. P. & R. Kingsley 1, c se nw nw 24-14-21w, dr 3630 ft.

ELLIS CONUTY — Streeter & Stearns' Laiker 1, sw ne 26-13-20w, sd 1294 ft.

SALINE COUNTY—Twin Moulds, Hughes 1, cw½ ne nw 20-13-4w, 700 ft, sd.

DICKINSON COUNTY — Krueger et al's Diche 1, c nw ..e ne 17-13-4e, chat 2125 ft, dr 2340 ft.

TREGO COUNTY—Phillips' Spitz 1, se c 24-12-25w, dr 3985 ft. Day's Guyler 1, c sw ne ne 36-12-21w, spd and sd. E. H. Morgan's Whithair 1, nw se 9-12-1e, sd 150 ft.

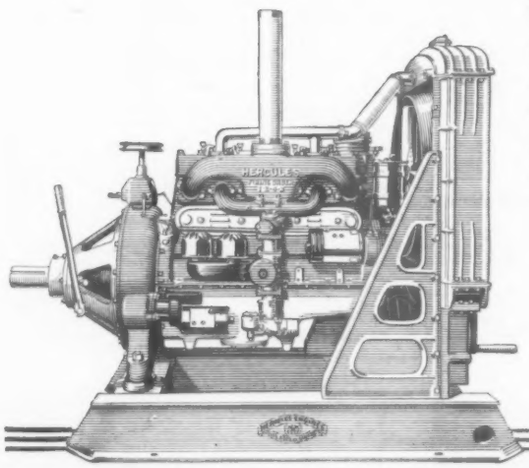
SHAWNEE COUNTY — Jenkins & Scott, Haden 1, ne se 8-12-14e, sd 750 ft. Jenkins & Scott Haden 1, se nw 10-12-17e, sd 550 ft.

ELLIS COUNTY—Byren et al's Fisher 1, nw se 4-11-20w, sd 1000 ft.

OTTAWA COUNTY—Derby's Niemuller 1, c nw se 9-10-8e, hfw 3110 ft, sd.

Hercules Power Unit Drives Emergency Pipe Line Pump

At Bristow, Oklahoma, the Transcontinental Oil Company keeps a Hercules-Powered Worthington Pump always ready for emergency pipe line service. The heavy-duty Hercules Power Unit operates with utmost dependability on all extraordinary tasks — provides a maximum of sturdy power under severest conditions.



Throughout the oil fields, where greatest efficiency is demanded of all machinery, Hercules Engines and Power Units have made outstanding records. For they operate with unmatched reliability and economy on varied types of oil-field equipment.

HERCULES MOTORS CORPORATION
Canton, Ohio, U. S. A.

WEST COAST BRANCH: LOS ANGELES, CAL.
MID-CONTINENT BRANCH: TULSA, OKLA.

Hercules Power Units and parts are also carried by the Norvell-Wilder Hardware & Supply Company of Houston, Texas; Beaumont, Texas; Fort Worth, Texas and Shreveport, Louisiana.

HERCULES ENGINES

Greater welding economy . . .

in the long run is obtained from the better grades of welding wire and electrodes. Page - Armco welding wire—for gas or electric welding—is free from detrimental inclusions . . . Every care possible is exercised to maintain the highest possible degree of uniformity.

PAGE STEEL *and* WIRE COMPANY

General Sales Office: New York Central Bldg., 230 Park Avenue, New York, N. Y.
District Sales Offices: Chicago, New York, Pittsburgh, San Francisco.
An Associate Company of the American Chain Company, *Inc.*

NATIONAL PETROLEUM ENGINEERING COMPANY
Engineers & Geologists
TULSA, OKLAHOMA

APPRAISALS
REPORTS-COMMERCIAL & TAX

SURVEYS
ESTIMATES OF OIL RESERVES

AN EXPERIENCED OIL FIELD ORGANIZATION

SHAWNEE COUNTY — Jenkins & Scott, Unknown 1, nw ne 28-10-15e, sd 985 ft.

JEFFERSON COUNTY—Wichita Oil Co.'s Simpson 1, nw sw sw 19-10-17e, ru and sd.

ROOKS COUNTY — Central Commercial's Toxa 1, ne sw se 22-9-17w, dr 3400 ft.

CLAY COUNTY—Chrisler's Tivler 1, swc 19-8-3e, spudded and sd. Arkansas Fuel's Martin 1, se ne sw 24-8-4e, sd 2570 ft.

GRAHAM COUNTY — Madolin's Unknown 1, c se sw sw 27-7-26w, spudded and sd.

OSBORNE COUNTY—Phillips' Grieve 1, nw se ne 6-7-12w, dr 3965 ft.

RILEY COUNTY — Derby-Skow Bros., Lundstrum 1, ne 32-7-5e, sd 2270 ft.

OSBORNE COUNTY—Mid-Kansas' Boyce 1, se nw 8-6-13w, td 4285 ft, running 5-in. cas.

RILEY COUNTY—Gray et al's Smith 1, ne se 30-6-6e, sd 1970 ft.

SMITH COUNTY—Phillips' Clydevale 1, se nw 23-6-14w, dr 3850 ft.

NORTON COUNTY—A. L. Richard's Colby 1, c sw 17-4-21w, rig.

WASHINGTON COUNTY—McCool & Vicent's Linn 1, nw ne 27-4-3e, sd 3100 ft.

MISSISSIPPI

ALCORN COUNTY—Alcorn Pet. Co.'s Matthews 1, 14-2-7, jarring out 6-in cas to reland at 2480 ft to test sand 2520-60 ft, td 2735 ft.

CHICKASAW COUNTY — Hightower & Golson's Fleming 1, 20-13-13, sd wo 1252 ft.

CLAIBORNE COUNTY—Ben White's Old Hen 1, 26-10-4, sd 2004 ft.

HARRISON COUNTY (Gulfport District)—Dalton Oil Co.'s Lopez 1, 15-7-10w, lcn.

HINDS COUNTY (Jackson District.—Mrs. Ella Rawls Reeder's State Land 1, 25-6-1, sd 2895 ft. Cleve Love et al's Mayes 1, 2-5-1e, set 10 in cas 730 ft, sd 1694 ft.

LAFAYETTE COUNTY—F. E. West et al's May 1, 22-10-1w, rigging up wo.

LAUDERDALE COUNTY— (Meridian District)—Lauderdale O. & G. Co.'s Lackey 1, 2-7-16, cemted 8¼-in cas 2795 ft, arr to dr plug, td 2816 ft. Meridian Nat. Gas Co.'s Mattie Houser 1, 33-8-18, sd 2629 ft. Boyd Hammond's Craig 1, 2-6-14, dk.

LINCOLN COUNTY (Brookhaven District)—Lincoln O. & G. Co.'s Pat Case 1, 21-8-6, arr to plug back to 1600 ft, td 2250 ft.

LEE COUNTY—Lee County Pet. Co.'s Hickman 1, 12-8-6, sd 920 ft.

MONROE COUNTY (Amory District)—Amory Pet. Co.'s Hall 1, 8-13-17, set 8-in cas 2293 ft, dr in new hole 2333 ft, td old hole 3045 ft. Amory Dev. Co.'s Bourland 1, 2-13-19, dr coarse gray sand 2909 ft. Park Bowser's Cowart 1, 2-12-19, sd 30 ft.

WARREN COUNTY (Vicksburg District)—Henderson et al's Dornbusch 1, 8-18-15, dr gbo streaks hard sand 2475 ft.

WEBSTER COUNTY — Cumberland Oil Co.'s Henley 1, 15-21-11, sd 1865 ft.

YALABOUSHA COUNTY (Water Valley District)—J. D. Collette et al's Blackmer 1, 14-11-4w, topped Cretaceous 1210 ft, topped Selma chalk 1415 ft, dr black shale with streaks coarse sand 2212 ft.

YAZOO COUNTY—Amerada Pet. Corp.'s Campbell 1, 24-12-2, rigged up ready to sp.

ALABAMA

HOUSTON COUNTY—J. R. Sealey's Fee 1, 13-1n-27e, changing from cable tools to rotary td 3100 ft.

LAMAR COUNTY—Briggs & Knapp's Wefel 1, 25-12-14, set 4⅞-in cas 1658 ft, arr test show oil.

LAWRENCE COUNTY—Peerson Drlg. Co.'s Jacobs 1, 11-7-7, ta 300 ft.

LAUDERDALE COUNTY—P. J. McAlpine's O'Neal Heirs 1, 8-2s-13w, moving in rig.

MARION COUNTY—P. J. McAlpine's Clark 1, 29-11-14, lcn.

MORGAN COUNTY—Albany-Decatur O. & G. Co.'s English 1, 6-6-4, fsh for cas 4130 ft.

SUMTER COUNTY—B. W. Bates' Fee 1, 3-18-1w, no report.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, dr lime 850 ft. Hobson Bros. 1, 9-8-2, sd 1450 ft. Oscar Brown's U. S. Land & Cotton 1, 26-3-2, sd 150 ft.

TENNESSEE

DECATUR COUNTY—Chester County O. & G. Co.'s Montgomery 1, set 6-in cas 1045 ft sd, bad weather, to 1545 ft.

KNOW

that 3 Safety Features stand by to grip your Line!....

...in the K.M. CO. CHAIN-DRIVEN SAND REEL

1 Friction Clutch operates through Brake, taking a controlling "grip" on the line.

2 Since Clutch operates through Brake, chance failure of Clutch mechanism does not affect Brake, which can immediately "grip" the line.

3 Emergency Brake, located in center of shaft, which means greater braking power under most operating conditions, "grips" the line in the event of failure of both Clutch and Brake Mechanisms.

The KM CO Chain-Driven Sand Reel insures the operator against losses through defective or short-sighted design. The three Safety Features listed at the left represent the acme of Sand Reel efficiency when it comes to absolute control of the line.

Flexible power prevents breaks if bailer sticks or strikes obstruction.

Brake Pulley is 36″x9″. 48″ diameter Flanges have spooling capacity of 10,433′ of ⅝″ line. Outside flanges are reinforced with 34″ diameter hubs. Center Flange is 1¼″ thick. Emergency Brake is 4″x34″ and operates from derrick floor or derrick walk. All castings are semi-steel and all friction surfaces are bronze-bushed.

The KM CO Reel is more accessible and easier to adjust than any other Chain-driven Sand Reel on the market.

PRODUCTS

Steel Derricks, Rig Irons, Bull Wheels, Calf Wheels, Band Wheels, Crown Blocks, Tug Wheels, Sand Reels, Steel Tankage, Tank Fittings, Refinery Equipment, Steel Plate Construction.

THE KIRK-MORROW IRON WORKS COMPANY

Sales Offices: Hunt Bldg., Tulsa, Oklahoma; Magnolia Bldg., Dallas, Texas; Central Bldg., Wichita, Kansas

Summary of Field Operations for December, 1929

RECAPITULATION—UNITED STATES

	Completions	Producers	Gas wells	Failures	Initial Prod. oil	Initial Prod. gas*	Total Prod.
Oklahoma	282	159	37	86	121,844	421½	20,092,850
Kansas	78	43	...	35	7,970	.....	3,452,100
Texas (Outside of Gulf Coast	498	242	44	212	117,782	996¾	21,292,100
Gulf Coast	117	73	...	44	57,229	.....	5,034,300
North Louisiana	60	16	30	14	6,771	371½	1,201,450
Arkansas	26	18	...	8	605	.....	1,919,850
Eastern States	656	361	164	131	13,808	159½	4,347,950
Rocky Mountain	..	..	...	...	.....	.....	2,347,650
California	74	66	...	8	107,255	.....	21,633,650
Total U. S	1791	978	275	538	433,264	1949¼	81,321,900
Total November	1965	1139	283	543	442,170	1778¼	79,398,453

*Millions of cubic feet.

CENTRAL OHIO

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Ashland	12	..	7	5	...	11½
Athens	8	2	3	3	3	3½
Belmont	1	..	1	..	...	¼
Coshocton	5	4	1	..	97	¼
Harrison	1	..	..	1	...	..
Hocking	4	1	2	1	65	½
Holmes	4	3	..	1	113	..
Jackson	5	..	3	2	...	¾
Knox	8	..	6	2	...	9½
Licking	12	8	3	1	82	¾
Lorain	5	..	3	2	...	3
Medina	6	1	1	4	3	1¼
Meigs	10	3	6	1	8	2¼
Muskingum	8	3	4	1	213	6
Perry	15	11	3	1	1,112	2¾
Pike	1	..	..	1	...	..
Portage	2	..	1	1	...	¼
Summit	6	..	5	1	...	10½
Vinton	4	2	..	2	15	..
Wayne	6	..	3	3	...	7½
Total	123	38	52	33	1,701	60½

SOUTHEASTERN OHIO

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Monroe	7	3	2	2	8	1¾
Morgan	11	2	5	4	10	3
Noble	8	1	3	4	2	1½
Washington	14	5	4	5	37	1½
Total	40	11	14	15	57	7¾

NORTHWESTERN OHIO

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Sandusky	2	2	..	..	45	..
Seneca	2	..	..	2	...	..
Wood	2	2	..	..	10	..
Total	6	4	..	2	55	..
Total Ohio	169	53	66	50	1,813	68¼

*Millions of cubic feet.

WEST VIRGINIA

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Boone	7	2	5	..	8	5¼
Braxton	1	..	1	..	...	1½
Cabell	3	..	3	..	...	¾
Calhoun	20	4	14	2	25	15¼
Clay	3	3	..	..	22	..
Doddridge	3	..	3	..	...	¾
Gilmer	10	1	7	2	2	5
Hancock	4	4	..	..	115	..
Harrison	4	2	2	..	5	2
Jackson	2	1	..	1	20	..
Kanawha	2	..	2	..	...	2
Lewis	2	..	1	1	...	½
Lincoln	7	..	7	..	...	2¼
Logan	1	..	1	..	...	1½
Marion	1	..	..	1	...	..
Marshall	6	..	5	1	...	4¼
Monongalia	6	1	5	..	15	5½
Pleasants	3	2	..	1	4	..
Putnam	1	..	1	..	...	¾
Ritchie	6	2	3	1	5	1¾
Roane	10	8	2	..	261	1¾
Tyler	2	1	..	1	2	..
Wetzel	1	1	..	..	2	..
Wirt	1	..	..	1	...	..
Wood	1	..	..	1	...	..
Total	107	32	62	13	486	51

NEW YORK

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Allegany	14	14	..	..	100	..
Total	14	14	..	..	100	..

PENNSYLVANIA

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Allegheny	2	..	2	..	...	2
Bradford	93	93	..	..	293	..
Butler	29	21	4	4	68	2¼
Center-Middle	1	1	..	..	3	..
Clarion	4	2	1	1	11	1
Greene	11	2	8	1	6	7
Venango	7	7	..	..	15	..
Washington	10	3	3	4	10	1¼
Total	157	129	18	10	406	14

KENTUCKY

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Christian	1	1	..	..	10	..
Daviess	16	15	..	1	765	..
Estill	1	1	..	..	20	..
Hancock	2	..	2	..	...	¾
Henderson	4	4	..	..	370	..
Hopkins	6	2	4	..	60	6½
Jackson	7	6	1	..	370	1
Lawrence	1	1	..	..	5	..
Lee-Owsley	2	2	..	..	7	..
Magoffin	1	1	..	..	4	..
Muhlenberg	5	1	..	4	200	..
Ohio	73	41	9	23	3,324	6½
Warren	1	1	..	..	22	..
Wayne	2	1	..	1	5	..
Total	122	77	16	29	5,162	14¾

INDIANA

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Adams	2	2	..	..	25	..
Daviess	2	..	..	2	...	..
Gibson	3	..	1	2	...	9
Monroe	2	1	1	..	5	½
Pike	4	4	..	..	160	..
Spencer	1	..	..	1	...	..
Sullivan	1	..	..	1	...	..
Vigo	1	1	..	..	15	..
Total	16	8	2	6	205	9½

ILLINOIS

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Clinton	1	..	..	1	...	..
Crawford	6	3	..	3	37	..
Jasper	1	..	..	1	...	..
Lawrence	6	5	..	1	58	..
Monroe	1	..	..	1	...	..
St. Clair	22	18	..	4	1,356	..
Wabash	5	3	..	2	135	..
Total	42	29	..	13	1,586	..

MICHIGAN

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Allegany	1	..	..	1	...	..
Isabella	15	11	..	4	2,475	..
Kent	1	..	..	1	...	..
Muskegon	11	8	..	3	1,575	2
Total	28	19	..	9	4,050	2

MISSISSIPPI

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Wildcats	1	..	..	1	...	..
Total	1	..	..	1	...	...
Total Eastern States	656	361	164	131	13,808	159½

Total Production Eastern States 4,347,950

(*See next page*)

Piping for all Gas and Oil Lines

Smoothing the way for MAINTENANCE

Smooth, flawless walls, free from pits and welded seams, make Pittsburgh Seamless Pipe and Tubing permanently resistant to scale and corrosion and pave the way for continuously free flow in the line. The tough grain structure of the forge-textured steel in Pittsburgh Seamless also assures a high pressure capacity that cuts down the number of pumping stations required. Pittsburgh Seamless is a dependable ally to uninterrupted service and a big factor in the reduction of maintenance costs.

Pittsburgh Steel Products Co.

DIVISION OF

Pittsburgh Steel Co.

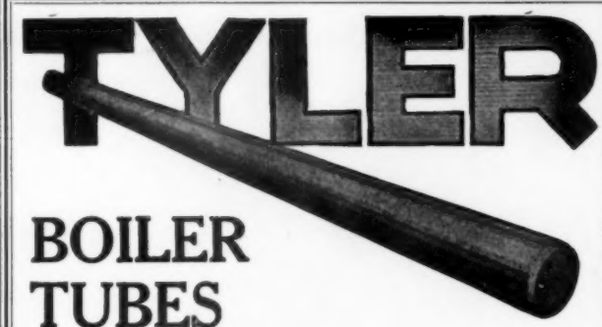
Largest Manufacturers of Seamless Steel Pipe and Tubing exclusively

PITTSBURGH NEW YORK ST. LOUIS CHICAGO DETROIT TULSA HOUSTON

Pittsburgh Seamless

DRILL PIPE CASING OIL WELL TUBING LINE PIPE STILL TUBES

2921



BOILER TUBES

O. H. Steel Boiler Tubes

Armco Ingot Iron Boiler Tubes

Cop-R-Loy Boiler Tubes

Request full details

THE TYLER TUBE & PIPE CO.

WASHINGTON, PA.

Warehouse Stocks

Harrisburg Pipe and Pipe Bending Co., Houston, Texas.

A. M. Castle & Co., Chicago, Seattle, Washington, San Francisco, Cal.; Los Angeles, Cal.

Harrisburg Supply Company, Tulsa, Oklahoma.

Lukens Steel Company, New Orleans, La.

ARMCO IRON LINE PIPE and OIL WELL TUBING

DIE KLEINE DREHWAAGE

Das handliche Instrument jedes Erdol-Prospektors

Gewicht 15-5 kg

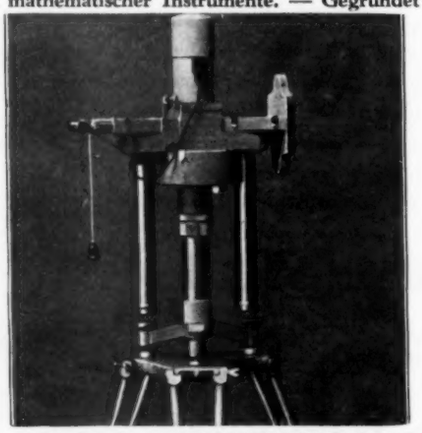
An Genauigkeit und Empfindlichkeit unubertroffen

Prospekte auf Verlangen

GEBRUDER HAFF, G. m. b. H.

Pfronten-Ried, Bayern

Fabrik mathematischer Instrumente. — Gegrundet 1835



THE SMALL TORSION-BALANCE

A portable instrument for all types of geological prospecting work.

Weight: 15-5 kilo net=34.2 lbs.

Unsurpassed in Accuracy and Sensitivity

Unequalled in operating when changing stations.

Prospects sent post free on application.

GEBRUDER HAFF, G. m. b. H.

Pfronten-Ried, Germany

Manufacturer of mathematical instruments—Founded 1835

CALIFORNIA

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Belridge	1	1	..	..	25	..
Elwood	3	3	..	..	10,900	..
Fruitvale	1	1	..	..	140	..
Huntington Beach	4	4	..	..	310	..
Kern Front	1	1	..	..	200	..
Long Beach	7	7	..	..	3,500	..
Maricopa Flats	6	5	..	1	9,200	..
Midway-Sunset	1	1	..	..	240	..
Mt. Poso Creek	1	1	..	..	300	..
Potrero	2	2	..	..	100	..
Richfield	1	1	..	..	140	..
Round Mountain	2	1	..	1	250	..
Santa Fe Springs	34	34	..	..	78,850	..
Seal Beach	2	2	..	..	1,500	..
Ventura	1	1	..	..	1,250	..
W. Coyote	1	1	..	..	350	..
Wildcats	6	..	..	6	...	..
Total	74	66	..	8	107,255	..

CALIFORNIA PORDUCTION SUMMARY

	Barrels
Santa Fe Springs	5,125,200
Long Beach	3,254,600
Huntington Beach	1,290,200
Dominguez	275,100
Inglewood	701,300
Midway-Sunset	2,328,550
Ventura	1,592,400
Seal Beach	898,900
Elwood-Goleta	1,011,250
Kettleman Hills	297,550
Others	4,858,600
Total	21,633,650

MOUNTAIN STATES PRODUCTION SUMMARY

WYOMING

Salt Creek	950,400
Grass Creek	65,100
Elk Basin	22,100
Big Muddy	65,850
Lost Soldier	99,200
Rock Creek	69,750
Lance Creek	4,650
Oregon Basin	121,650
La Barge	70,900
Others	143,750
Total	1,613,350

MONTANA

Cat Creek	37,950
Sunburst	210,750
Pondera	72,450
Others	2,700
Total	323,850

COLORADO

Moffats	34,500
Fort Collins	56,200
Florence	20,900
Others	53,450
Total	165,050

NEW MEXICO

Table Mesa	3,100
Artesia	24,000
Hogback	12,800
Rattlesnake	35,400
Balance Lea and Eddy Counties	143,350
Others	26,750
Total	245,400
Grand Total Rocky Mountain States	2,347,650

KANSAS

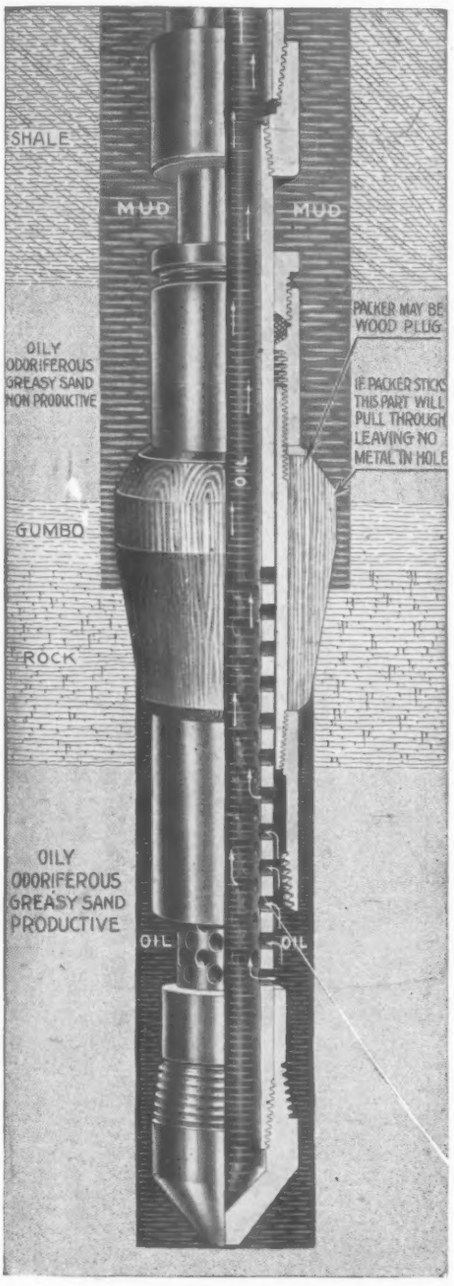
	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Butler	10	4	..	6	208	..
Chautauqua	1	1	..	..	30	..
Chase	1	1	..	..	30	..
Coffey	2	2	..	..	45	..
Cowley	2	1	..	1	30	..
Douglas	1	..	..	1	...	..
Elk	4	2	..	2	300	..
Ellis	2	2	..	..	690	..
Greenwood	17	10	..	7	805	..
Harper	2	..	..	2	...	..
Harvey	1	..	..	1	...	..
Lyon	4	1	..	3	150	..
McPherson	5	3	..	2	1,770	..
Morris	1	..	..	1	...	..
Ness	1	1	..	..	185	..
Reno	1	..	..	1	...	..
Russell	2	2	..	..	325	..
Saline	1	..	..	1	...	..
Sedgwick	17	11	..	6	3,242	..
Sumner	2	2	..	..	160	..
Woodson	1	..	..	1	...	..
Total	78	43	..	35	7,970	..

(*See next page*)

For Real SERVICE

EDWARDS FLOW TESTER

has these dominant points of superiority



This device fully protected by Patents and Patents Pending

1. Means for producing a vacuum in the sands being tested.
2. Means for agitating the fluid against the fact of the formation being tested.
3. You can rotate during entire test. You want a sample and not a stuck pipe.
4. With the combination Packer that will make a test in rotten formation.
5. Perforated pipe covered going in well. You want a test and not a choke off.
6. No valves to stick in the Flow Tester. You know when the Flow Tester opens.
7. Metal parts of the Flow Tester no larger than the Drill Stem. You can drill smaller holes and save money.
8. Test in any "Rat Hole" 3 1/8 inches or larger or in open hole 4 1/8 inches or larger.

Manufactured by
Houston Engineers, Inc.
HOUSTON, TEXAS
P. O. Box 276
Preston 1927

Exclusive Export Distributor:
W-K-M Company, Inc.
HOUSTON, TEXAS
Export Office: 74 Trinity Place, New York, N. Y.

KANSAS PRODUCTION SUMMARY

	Barrels
Greenwood	666,400
Florence	31,000
Peabody	96,450
El Dorado	405,000
Augusta-Fox-Bush	93,000
Rainbow Bend	35,650
Russell	106,000
Churchill	159,250
Oxford	108,100
Sedgewick	726,850
Others	1,024,400
Total	3,452,100

OKLAHOMA PRODUCTION SUMMARY

Braman	113,500
Blackwell	114,650
Hubbard	52,700
Thomas	18,600
Tonkawa	273,550
Garber	148,000
Burbank	538,950
Osage	829,900
Cushing	481,600
Yale	240,200
Davenport	39,150
Bristow	578,850
North Okmulgee	353,350
Lyons-Deaner	219,300
Cromwell	235,550
Papoose	99,200
Wewoka	133,300
Seminole	761,350
Bowlegs	733,050
Searight	270,050
Little River	2,046,900
Earlsboro	2,052,700
Duncan	260,750
Graham	119,350
Fox	40,300
Healdton	389,000
Hewitt	239,850
Scholem-Alechem	434,200
Pearson	26,750
Oklahoma City	2,181,350
Mission	478,500
Carr City	301,050
East Seminole	139,500
Asher	114,700
Sasakwa	305,700
St. Louis	1,622,250
Allen	662,550
Maud	281,850
Logan County	449,450
Others	1,711,350
Total	20,092,850

OKLAHOMA

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Atoka	1	..	..	1	...	..
Beckham	1	..	1	..	...	5
Caddo	3	1	..	2	125	..
Carter	13	7	2	4	733	85
Cleveland	1	..	..	1	...	..
Cotton	12	10	1	1	785	8
Creek	24	13	3	8	681	9
Grady	2	1	1	..	15	10
Harmon	1	..	..	1	...	..
Hughes	6	3	..	3	290	..
Jefferson	2	2	..	..	180	..
Kay	3	1	..	2	950	..
Kiowa	2	..	..	2	...	..
LeFlore	2	..	2	..	...	3¼
Lincoln	2	..	2	..	...	10½
Logan	1	1	..	..	1,430	..
Marshall	4	4	..	..	285	..
Muskogee	10	3	4	3	66	5
McIntosh	1	..	..	1	...	..
Okfuskee	10	6	..	4	417	..
Okmulgee	16	5	5	6	155	6¾
Oklahoma	8	8	..	..	56,131	140
Osage	17	5	7	5	435	5½
Pawnee	9	6	..	3	540	..
Payne	4	3	..	1	2,160	..
Pontotoc	16	13	1	2	705	7
Pottawatomie	34	20	2	12	10,120	23
Seminole	57	40	2	15	44,809	60
Sequoyah	1	..	1	..	...	½
Stephens	12	7	1	4	832	40
Wagner	5	..	2	3	...	2¾
Woodward	1	..	..	1	...	..
Tillman	1	..	..	1	...	..
Totals	282	159	37	86	121,844	421¼

ARKANSAS

	Completions	Producers	Gas wells	Failures	Initial oil	Prod. Gas*
Ouachita	11	9	..	2	345	..
Union	11	9	..	2	260	..
Wildcats	4	..	..	4	...	..
Total	26	18	..	8	605	..

ARKANSAS PRODUCTION SUMMARY

	Barrels
El Dorado	134,050
Champagnolle	173,950
Smackover—Light	178,200
Smackover—Heavy	1,330,900
Stephens	31,400
Nevada	33,750
Lisbon	34,500
Others	3,100
Total	1,919,850

NORTH LOUISIANA

	Completions	Producers	Gas Wells	Failures	Initial oil	Prod. Gas*	Total Prod.
Bellevue	..	..	..	..	...	..	18,600
Bossier	3	..	3	..	...	23½	.....
Caddo	4	3	..	1	130	..	406,450
Cotton Valley	..	..	..	..	...	..	73,200
De Soto-Red River	..	..	..	..	...	..	97,250
Elm Grove	..	..	..	..	...	..	17,050
Haynesville	..	..	..	..	...	..	146,450
Homer	..	..	..	..	...	..	120,100
LaSalle	2	1	..	1	50	..	.....
Morehouse	4	..	4	..	...	16½	.....
Ouachita	8	..	7	1	...	17¾	.....
Pleasant Hill	..	..	..	..	...	..	24,400
Richland	9	1	8	..	39	220¾	.....
Sabine	2	2	..	..	140	..	.....
Union	7	1	6	..	2	25	.....
Urania	..	..	..	..	...	..	168,150
Webster	1	..	1	..	...	18	.....
Zwolle	..	..	..	..	...	..	109,250
Wildcats	20	8	1	11	6,410	50	.....
Others	..	..	..	..	...	..	20,550
Total	60	16	30	14	6,771	371½	1,201,450

SOUTH LOUISIANA

Anse La Butte	1	..	..	1	...	..	.....
Bayou Bouillon	1	..	..	1	...	..	2,700
E. Hackberry	2	1	..	1	2,400	..	68,950
Edgerly	2	1	..	1	1,400	..	22,100
Evangeline	1	1	..	..	40	..	49,600
Hackberry	3	1	..	2	70	..	61,600
Hager Dome	1	..	..	1	...	..	.....
Jefferson Island	1	..	..	1	...	..	.....
Lockport	..	..	..	..	...	..	107,300
Loreauville	1	..	..	1	...	..	.....
Roanoke	1	..	..	1	...	..	.....
Sorrento	1	..	..	1	...	..	4,650
Starks Dome	4	2	..	2	300	..	.....
Sulphur	..	..	..	..	...	..	142,200
Vinton	1	1	..	..	5	..	134,450
Wildcats	1	..	..	1	...	..	.....
Others	..	..	..	..	...	..	91,450
Total	21	7	..	14	4,215	..	685,000
Total Louisiana	81	23	30	28	10,986	371½	1,886,450

SOUTHWEST TEXAS

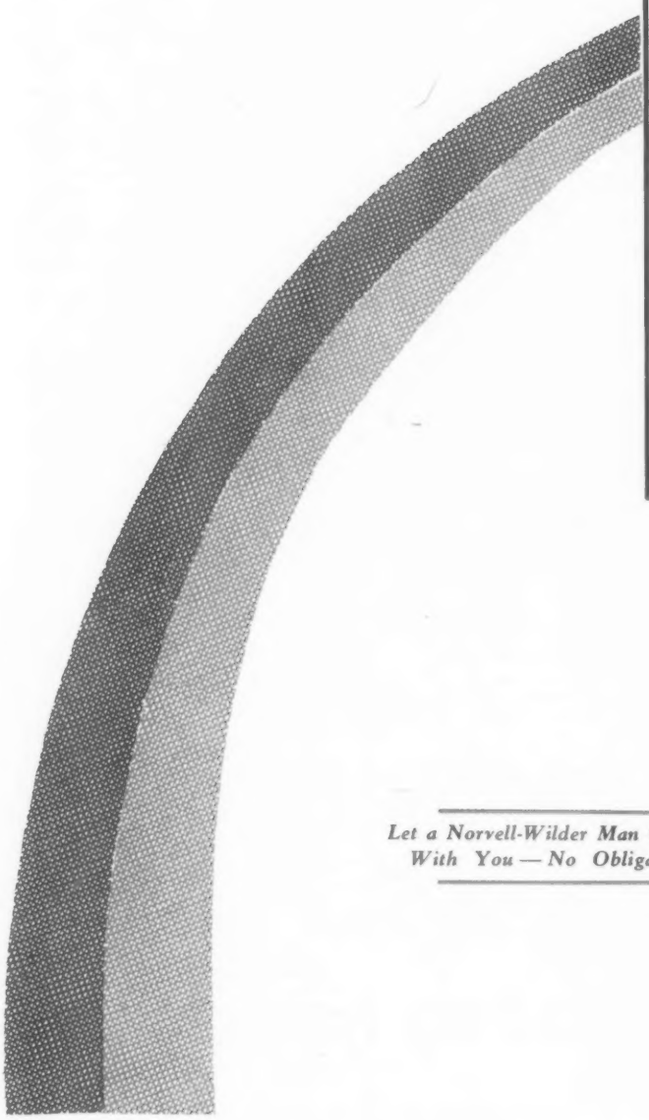
Bastrop	1	..	..	1	...	..	.....
Bee	2	..	..	2	...	..	.....
Bexar	5	5	..	..	25	..	.....
Brooks	1	..	..	1	...	..	.....
Caldwell	4	4	..	..	152	..	.....
Dale	..	..	..	..	...	..	11,250
Darst Creek	7	6	..	1	3,150	..	.....
Duval	12	6	6	..	408	137	.....
Dimmitt	1	..	..	1	...	..	.....
Goliad	1	..	..	1	...	..	.....
Gonzales	2	..	..	2	...	..	.....
Jim Hogg	6	..	1	5	...	20	.....
Laredo District	..	..	..	..	...	..	286,300
Luling	..	..	..	..	...	..	333,200
Lytton Springs	..	..	..	..	...	..	27,900
Medina	4	..	1	3	...	3½	.....
Nueces	1	..	1	..	...	50	.....
Refugio	13	7	6	..	2,355	250	497,850
Salt Flat	1	1	..	..	75	..	933,750
Somerset	..	..	..	..	...	..	45,700
Starr	1	1	..	..	30	..	.....
Wilson	2	..	..	2	...	..	.....
Webb	7	2	3	2	45	75	.....
Zapata	8	3	3	2	350	35	.....
Zavalla	1	..	..	1	...	..	.....
Others	..	..	..	..	...	..	96,100
Total	80	35	21	24	6,590	570½	2,232,050

(See next page)

OUT of the development of every basic industry rises a few institutions recognized as leaders. They have arrived because they have served. Norvell-Wilder's position in the oil industry is due to a service based on twenty years of intimate knowledge of the oil business.

Constant contact with the field man over so long a time gives an understanding of needs. There is no wasted effort—no experimenting. Service is always present—the right tool can always be had at the right time.

Men of the industry have signified their confidence in this company. Men of the company have realized that integrity and dependability are the basis of worth.



Let a Norvell-Wilder Man Council With You — No Obligation.

Norvell-Wilder Supply Company

BEAUMONT HOUSTON SHREVEPORT FORT WORTH

TEXAS RECAPITULATION

	Completions	Producers	Gas wells	Failures	Initial Prod. oil	Initial Prod. gas*	Total Prod.
Panhandle	31	18	11	2	19,921	386	3,177,050
Southwest	80	35	21	24	6,590	570½	2,232,050
North	137	65	..	72	8,930	...	2,774,850
East	10	..	3	7	....	2½	.....
West	76	53	..	23	67,945	...	10,740,500
West Central	149	67	8	74	6,496	32¾	1,701,250
East Central	15	4	1	10	7,900	5	666,400
Total Texas Gulf Coast	498	242	44	212	117,782	996¾	21,292,100
Texas Gulf Coast	96	66	..	30	53,014	...	4,349,300
Grand Total	594	308	44	242	170,796	996¾	25,641,400

*Millions of cubic feet.

PANHANDLE TEXAS

	Completions	Producers	Gas Wells	Failures	Initial Prod. oil	Initial Prod. Gas*	Total Prod.
Carson	2	..	2	..	...	51	282,850
Donley	1	..	..	1	...	..	.....
Gray	20	15	4	1	19,365	147	2,053,100
Hutchinson	3	3	..	..	555	..	797,350
Wheeler	5	..	5	..	...	188	19,750
Others	..	..	..	..	...	..	24,000
Total	31	18	11	2	19,921	386	3,177,050

NORTH TEXAS

	Completions	Producers	Gas Wells	Failures	Initial Prod. oil	Initial Prod. Gas*	Total Prod.
Archer	43	14	..	29	863	..	569,150
Baylor	6	3	..	3	245	..	.....
Burkburnett	1	1	..	..	20	..	296,800
Clay	5	3	..	2	112	..	.....
Cooke-Montague	14	6	..	8	237	..	447,100
Electra	13	5	..	8	265	..	362,250
Fannin	1	..	..	1	...	..	.....
Foard	1	1	..	..	100	..	.....
KMA-Iowa Park	11	6	..	5	733	..	149,150
Wilbarger	42	26	..	16	6,355	..	923,300
Others	..	..	..	..	...	..	27,100
Total	137	65	..	72	8,930	..	2,774,850

WEST CENTRAL TEXAS

	Completions	Producers	Gas Wells	Failures	Initial Prod. oil	Initial Prod. Gas*	Total Prod.
Brown	35	24	..	11	1,696	..	310,750
Callahan	7	3	..	4	345	..	98,000
Coleman	12	7	1	4	950	17½	199,150
Comanche	1	..	..	1	...	..	.....
Eastland	15	5	2	8	455	9¼	192,950
Erath	3	..	2	1	...	2¼	.....
Jack	11	5	..	6	1,155	..	123,200
Palo Pinto	3	1	2	..	55	2¾	15,500
Shackleford	20	6	..	14	425	..	288,650
Stephens	5	1	..	4	30	..	190,600
Throckmorton	5	1	1	3	25	1	18,600
Young	32	14	..	18	1,360	..	221,250
Others	..	..	..	..	...	..	42,600
Total	149	67	8	74	6,496	32¾	1,701,250

EAST CENTRAL TEXAS

	Completions	Producers	Gas Wells	Failures	Initial Prod. oil	Initial Prod. Gas*	Total Prod.
Boggy Creek	3	1	1	1	400	5	124,000
Corsicana-Powell	..	..	..	..	...	..	210,750
Currie	..	..	..	..	...	..	12,400
Falls	1	..	..	1	...	..	.....
Hill	1	..	..	1	...	..	.....
Limestone	3	..	..	3	...	..	.....
Mexia	..	..	..	..	...	..	158,450
Milam	2	..	..	2	...	..	.....
Nigger Creek	..	..	..	..	...	..	9,300
Richland	..	..	..	..	...	..	9,300
Rusk	1	..	..	1	...	..	.....
Van Zandt	3	3	..	..	7,500	..	113,900
Wood	1	..	..	1	...	..	.....
Wortham	..	..	..	..	...	..	28,300
Total	15	4	1	10	7,900	5	666,400

WEST TEXAS

	Completions	Producers	Gas Wells	Failures	Initial Prod. oil	Initial Prod. Gas*	Total Prod.
Crane	8	8	..	..	1,410	..	1,409,550
Crockett	..	..	..	..	...	..	65,100
Fisher	1	1	..	..	450	..	.....
Glasscock	5	5	..	..	4,050	..	.....
Howard	10	10	..	..	3,340	..	1,184,800
Jones	..	..	..	..	...	..	73,600
Loving	2	2	..	..	230	..	.....
Mitchell-Scurry	..	..	..	..	...	..	75,550
Pecos	21	21	..	..	57,700	..	4,401,450
Reagan	..	..	..	..	...	..	533,900
Ward	3	2	..	1	115	..	.....
Winkler	1	1	..	..	500	..	2,902,400
Wildcats	25	3	..	22	150	..	.....
Others	..	..	..	..	...	..	94,150
Total	76	53	..	23	67,945	..	10,740,500

EAST TEXAS

	Completions	Producers	Gas Wells	Failures	Initial Prod. oil	Initial Prod. Gas*	Total Prod.
Anderson	1	..	..	1	...	..	.....
Harrison	1	..	..	1	...	..	.....
Henderson	2	..	..	2	...	..	.....
Panola	3	..	3	..	...	2½	.....
Shelby	3	..	..	3	...	..	.....
Total	10	..	3	7	...	2½	.....

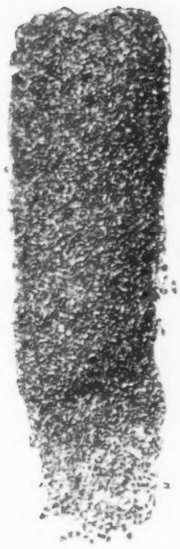
TEXAS GULF COAST

	Completions	Producers	Gas Wells	Failures	Initial Prod. oil	Initial Prod. Gas*	Total Prod.
Barbers Hill	11	9	..	2	6,020	..	543,200
Batson	2	2	..	..	9	..	41,050
Big Creek	4	4	..	..	13,950	..	161,550
Blue Ridge	2	2	..	..	420	..	67,000
Boling	1	..	..	1	...	..	37,600
Brenham	2	1	..	1	10	..	.....
Clay Creek	..	..	..	..	...	..	53,100
Clemens Dome	1	..	..	1	...	..	.....
Damon Mound	..	..	..	..	...	..	14,700
Esperson Dome	1	1	..	..	450	..	.....
Fannett	1	1	..	..	3,000	..	50,350
Goose Creek	5	2	..	3	45	..	165,050
Hockley	1	..	..	1	...	..	.....
Hull	4	4	..	..	3,600	..	322,450
Humble	6	3	..	3	950	..	428,150
Lost Lake	3	2	..	1	3,000	..	.....
Moores Field	1	..	..	1	...	..	.....
No. Dayton	2	2	..	..	3,625	..	45,900
Orange	2	2	..	..	5	..	88,350
Pierce Junction	6	5	..	1	5,555	..	368,050
Port Neches	1	1	..	..	2,200	..	51,000
Raccoon Bend	12	12	..	..	6,205	..	278,950
Rockland	1	1	..	..	30	..	.....
San Felipe	1	..	..	1	...	..	.....
Saratoga	2	2	..	..	95	..	30,600
Sour Lake	1	1	..	..	50	..	75,950
So. Liberty	2	2	..	..	285	..	182,450
Spindle Top	5	3	..	2	1,735	..	577,700
Sugar Land	3	3	..	..	775	..	397,700
West Columbia	2	1	..	1	1,000	..	200,700
Wildcats	11	..	..	11	...	..	.....
Others	..	..	..	..	...	..	167,750
Total	96	66	..	30	53,014	..	4,349,300

Petroleum Year Book

Los Angeles.—The California Petroleum Year Book for 1929, published by Petroleum Publications Company, 1709 West Eighth Street, Los Angeles, and compiled by C. O. Sprenger, has come from the press and is being distributed. This year book contains names and addresses of the active oil companies in California, with names of officials, in addition to a list of oil companies now inactive, and a late list of active refineries. It also carries a list of associations of oil men and allied interests in addition to a number of statistics on the production, refining and sales of petroleum products in the state. The hand book is the first of the kind ever issued in California.

L. W. Rogers, a British engineer connected with the London office of the National Supply Corporation, is spending several week in California, as is W. J. Campbell, National Supply Company representative in Venezuela.



Tube Titan Metal, granular form, supplied in handy 10-inch tubes.

TITAN METAL

the hardest *and* toughest facing metal known!

Drilling Bit set with Titan Metal before facing.

The manufacture of Titan Metal is fully covered by patents. Infringements will be prosecuted.

Operators are making enviable records for speed and economy with Titanized tools—in many instances Titanized bits have made more than one thousand feet of hole.

Titan is adaptable for every type of bit, and for every individual requirement. It is available in graded sizes for inserts, and Tube Titan Metal in granular form—put up in handy tubes for convenient use. Only one application is required. It will not crumble nor break away. The bit can be heat treated in any desired manner after the compound is applied.

Get the facts! Write for complete information, performance records, prices, etc.

MILLS ALLOYS, INC.

3202 So. San Pedro Street

Los Angeles, California, U.S.A.

FOR RENT

Within the PORT of
NEW ORLEANS

INDEPENDENT TANK TERMINAL FOR OIL STORAGE

Capacity, over 8,000,000 gallons.
Private Switch on Texas & Pacific Railroad.

Private Wharf, deep water.

Write or Wire

INTERNATIONAL STORAGE AND WAREHOUSE CO.

305 Citizens Bank Bldg. New Orleans, La.

Have a Copy Sent to Your Home

Why depend on reading the "Office Copy" when you can get a copy of The OIL WEEKLY for your own files,—sent to your home each week for

ONLY $1.00 A YEAR

Use the Coupon NOW

- - - - - - - - - - - - - - - -

The OIL WEEKLY,
Box 1307, Houston Texas.

Gentlemen: Please find enclosed one dollar (check or currency will do) for which send me your publication for one year.

Name .....

Street and No. .....

City ..... **State** .....

I am with the .....**Company**

and my position is .....

(BE SURE TO STATE COMPANY AND POSITION, otherwise it will be necessary for us to hold up entering your subscription until we can get this information from you.)

Bibliography of Economic Geology

Dr. C. A. Heiland, professor of geophysics, Colorado School of Mines, Golden, Colorado, has made special arrangements with the Economic Geology Publishing Company, Urbana, Illinois, by which reprints have been made of the first number of the bibliography on geophysical prospecting, extracted from Dr. Heiland's "Annotated Bibliography of Economic Geology for 1928." The number comprises approximately 225 articles which were circulated in 1928. In the future semi-annual issues will be published in March and July each year.

The geophysical section of the first number of the bibliography of economic geology has been reprinted for private circulation. It is being distributed among authors of geophysical papers in order to acquaint them with the bibliography and to induce them to help the enterprise by mailing reprints of their articles to the reviewer.

Authors whose papers or articles are included in Dr. Heiland's bibliography on geophysical prospecting are listed alphabetically, and brief but always comprehensive abstracts of all papers are given.

Future numbers of the geophysical section may be secured by subscription to the entire bibliography of economic geology. The price is $5 a year for two numbers. The yearly volume contains about 400 pages and 2000 reviews. The Economic Geology Publishing Company handles the distribution.

Oil and Gas in Alabama

"Oil and Gas in Alabama" is the title of a comprehensive treatise written by Dr. Douglas R. Semmes, petroleum geologist, 25 Broadway, New York, with the co-operation of W. B. Jones, state geologist, and his staff, and published by the University of Alabama as Special Report 15 of the Geological Survey of Alabama. The book comprises 408 pages, bound in substantial cloth covers, and is made very interesting and clear through the use of numerous photographs, diagrams, curves, graphs, and maps. The price of the book is $1.15.

This book by Dr. Semmes is reviewed in a commendable report by Sidney Powers in the November, 1929, issue of the Bulletin of the American Association of Petroleum Geologists. Mr. Powers says:

"This comprehensive treatise on oil and gas possibilities in Alabama is a welcome contribution to the knowledge of the structural geology of the state. The first 40 pages are devoted to an up-to-date, brief statement of the origin and accumulation of oil and of the methods now being employed to find structure favorable for drilling. Northern Alabama is described in 160 pages, Southern Alabama in 200 pages. A number of instructive and accurate structure contour maps, a map showing the location of all the wells drilled in the state, and tabulations listing all wells and giving available information about them accompany the text. The state geologist and author are to be complimented on this most useful volume.

"Owing to the absence of the author when the volume was in press, a few errors will be found. On page 286 the Waskom gas field, on page 291 the Keechi salt dome, and on page 377 the Alahoma Oil Company's well are difficult to recognize because of incorrect spelling. The small colored geological map of the state, published in 1920, unfortunately does not accompany this report.

"It is interesting to notice (page 370) that the Appalachian Mountains trend southwest or west under the Coastal Plain and (page 292) that salt domes will probably not be found in Alabama because of the location of the late Paleozoic geosyncline."

2 TOOLS IN 1

—IT REAMS ONLY
—IT UNDERREAMS

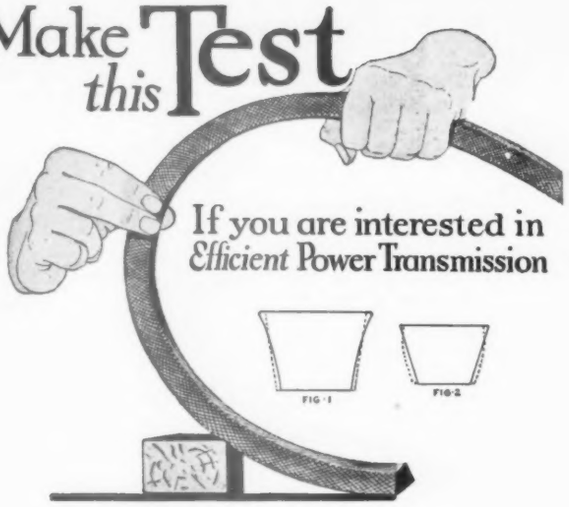
THUS YOU HAVE A TWO-PURPOSE TOOL IN ONE

ASK GRANT OIL TOOL CO.

2042-44 E. Vernon Ave.
LOS ANGELES, CALIF.

UNDERREAMER HEADQUARTERS

Make this Test



Here is a simple test that proves the value **to you** of the concave molded sides of Gates Vulco Rope.

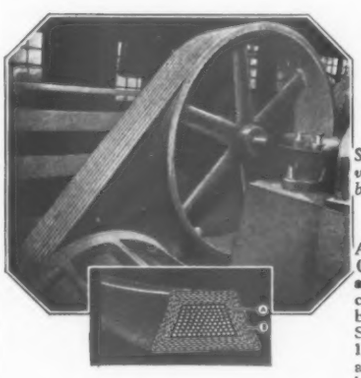
Grip the concave sides between your thumb and finger while you bend the belt as it would bend in going around a pulley.

As the belt bends, your finger and thumb will feel the concave sides **straighten out**—exactly as illustrated by the dotted lines in figure 1.

Now, try the same test with the ordinary, straight-sided belt. As this belt bends, the straight sides are forced to bulge outward and the belt assumes, in the sheave groove, the shape indicated by the dotted lines in figure 2. This bulging against the sheave groove walls naturally produces uneven wear along the sides of the belt. And because the contact is not extended evenly across the entire side of the belt, there is only a partial grip on the pulley and the consequence is a definite loss in transmission efficiency.

That is why the concave molded side (patent pending) of Gates Vulco Rope is important to you. It means a perfect fit in the sheave groove when this belt bends around the pulley. The full side-width contact is maintained—and this means full delivery of power. Wear is evenly distributed over the entire side of the belt and this means longer life.

Our engineering department is prepared to render you a truly helpful service in drive designing without the slightest obligation.



Send for this valuable, helpful book—today!

Patented Construction

A core of strong endless cords (to give the belt strength) with a bias cut cover (to protect the core and stand long wear) are both Gates patents. United States, patents 1,354,738 and 1,400,539 protect the principle and the construction of a V-belt having a center of endless cords with a bias cut cover.

GATES VULCO ROPE

MULTIPLE V-BELT DRIVES

Manufactured by Gates Rubber Co., Denver, U. S. A.

The World's Largest Manufacturer of V-Belts

C. W. WEBSTER

West Texas Oil and Gas Leases
⅞ *Mineral Deeds*

ROYALTIES

18 Years in Texas

Reference: Mercantile Agencies and National Banks

Petroleum Building
FORT WORTH, TEXAS

HEYDRICK'S NEW MAPS

WEST TEXAS

County Maps

Combination Maps

Descriptions and prices on application

HEYDRICK MAPPING COMPANY

Wichita Falls, Texas

McCollum Exploration Co.

Contracts taken for Seismograph Work

UNITED STATES	FOREIGN COUNTRIES
5522 Connecticut Ave.,	1211 Esperson Bldg.,
WASHINGTON, D. C.	HOUSTON, TEXAS

HIRSCH, BROWN AND SUSMAN

Attorneys at Law

32nd Floor Gulf Building
Houston, Texas

Specializing in Oil Law and Land Law

PATENTS

Patents Obtained and Trade Marks and Copyrights Registered

HARDWAY & CATHEY

428-29-30 Bankers Mortgage Bldg.
Phone Fairfax 8232 Houston, Texas

PATENTS

Patents Obtained, Trade Marks, Patent Causes

JESSE R. STONE

Formerly Assistant Examiner
United States Patent Office
Andrews, Streetman, Logue & Mobley
12th Floor Union N. Bk., Houston, Texas

THE FT. WORTH LABORATORIES

Field Gas Testing. Analysis of oil field brines, gas minerals and oil. Sell Thermometers, Hydrometers and Laboratory Glassware.
F. B. Porter, B. S., Ch. E., Pres.
R. H. Fash, B. S., Vice-President
828½ Monroe St, Ft. Worth, Tex.

Security Dealer

Desires Attractive Stock Issue to Present Investors

W. E. A. Wheeler & Co.

Established 1906
90 Wall Street
NEW YORK CITY

Shreveport Plant Gets Van Crude

Corsicana, Texas.—Pure Oil Company has contracted to sell 2500 barrels, or more, daily of the production from the Van field, Van Zandt County, to the Louisiana Oil Refining Corporation at the Mid-Continent gravity scale price, plus charges to tank car rack, and deliveries are to be increased as the potential output of the field gains. Pure Oil Company's field organization is developing all leases in the field under a unit plan, and has arranged to provide a crude market during the first year, with plans also going forward for construction of a 10-inch trunk line to its refinery at Smiths Bluff.

Pure Oil Company's 19½-mile 10-inch line, extending from storage tanks west of the Van field to a 70-car rack on the Cotton Belt Railroad at Chandler, was placed in operation December 16. The field is averaging about 6000 barrels of 35-36 degree gravity oil daily from four wells. A freight rate of 13 cents per 100 pounds applies on tank car shipments of crude from Chandler to Smiths Bluff, and other Coastal refining centers. It is reported that a rate of 20 cents per barrel has been obtained by the Louisiana Oil Refining Corporation on crude moving from the Chandler rack to its refinery at Shreveport, Louisiana, while the pipe line transportation and car loading tariff is 12 cents per barrel.

R. A. Griffith, president of Sinclair Oil & Gas Company, Tulsa, is recuperating from a month's illness at San Diego, California. He plans to return to Tulsa shortly.

CONFIDENTIAL SCOUT REPORTS

On all CALIFORNIA FIELDS and WILDCATS

So. Calif. Weekly	$10 per mo.
Nor. Calif. Weekly	$10 per mo.
Nor. and So. Calif. Daily	$10 per mo.

Combination rates furnished on request.

Munger Oil Information Service

416 Haas Bldg. Los Angeles, Cal.

Coastal Oil Finding Company

Contracts taken for Torsion Balance Work

Esperson Bldg., Houston, Texas

Phone Fairfax 4383

CHRISTIAN IDEN

U. S. Representative
Toepfer & Company
(Germany)

Geophysical Instruments

Magnetometers, Torsion Balances, Etc.
718 Esperson Building
HOUSTON, TEXAS

Agents Wanted for
Oklahoma and California

EOTVOS TORSION BALANCES

Suss-Eotvos Visual Observation
Suss-Rybar Visual or Automatic Observation

GEORGE STEINER

Exclusive representative for the Americas
Petroleum Building Houston, Texas

GEOPHYSICAL SURVEYS

Torsion Balance - Magnetometer

Survey by	Report by
GEORGE STEINER	DONALD C. BARTON
Consulting Geophysicist	Consulting Geologist and Geophysicist
Petroleum Building, Houston, Texas	Petroleum Building, Houston, Texas

JOHN F. WEINZIERL
CONSULTING GEOLOGIST
ADVISOR ON GEOPHYSICAL INSTRUMENTS

607-8 Petroleum Bldg., Houston, Texas

MAJESTIC HOTEL
LAKE CHARLES, LA.

Your home while in Southwest Louisiana

Headquarters for Oil Co. Representatives

"Photographs of Oil Fields and Machinery Must Be Right"
Calvin Wheat's Photographs Are Right!

CALVIN WHEAT STUDIOS

415 Louisiana St. Preston 2526
Houston, Texas

We are in touch with eastern capital for loans on oil production and mining, with further development on properties of merit, in amounts of $150,000 and up. Send full particulars. O. E. & G. M. Maddox, 6323 Main St., Kansas City, Mo.

SKILLED SUPERVISION GUARANTEES THE QUALITY OF GULF PRODUCTS

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

GULF REFINING COMPANY

General Sales Offices

PITTSBURGH, PA.

District Sales Office

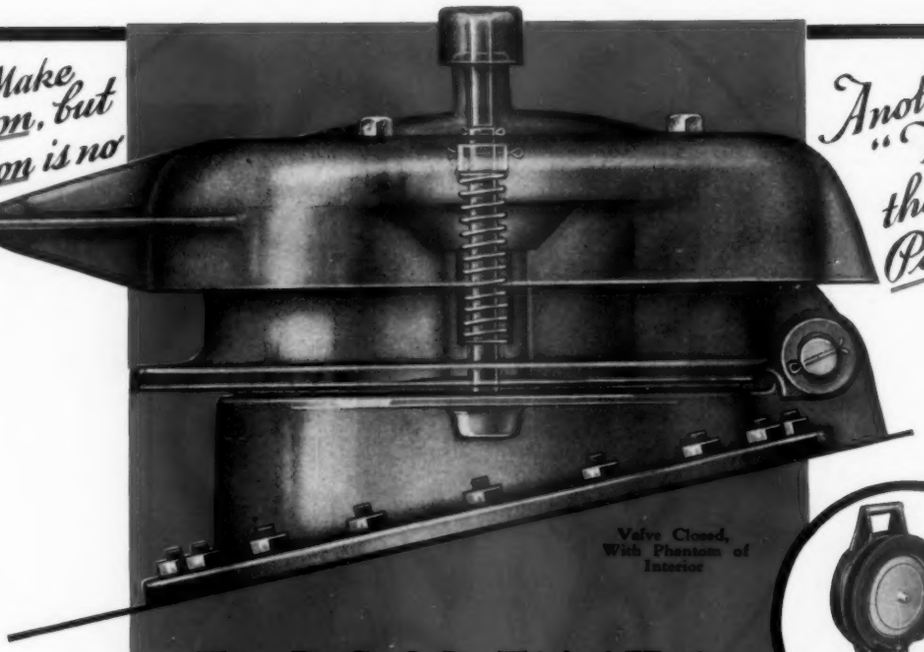
New York Boston Philadelphia Louisville Atlanta Houston New Orleans

Ocean Terminals

Boston (Beverly), Mass.
Providence, R. I.
New York Harbor (Bayonne, N. J.)
Jacksonville, Fla.
Port Tampa, Fla.
Mobile (Magazine Point, Ala.)
Philadelphia (Girard Point, Pa.)
Charleston, S. C.
Savannah, Ga.
New Orleans (Gretna, La.)
Port Arthur, Texas
Galveston, Texas

"Trifles Make Perfection, but Perfection is no Trifle."

Another "Trifle" that makes Perfection!



Valve Closed, With Phantom of Interior

Valve Opened

The B. S. & B. Thief Hole Pressure Vacuum Valve

This valve protects a Tank from bulging or collapsing due to an excess amount of pressure or vacuum.

This illustration presents a phantom view of the inside of the B.S.&B. Valve. Though intricate in its various parts, is of rugged construction and design, in addition to its regular functions, to withstand the abuses to which it may be put in actual practice. Each part is foolproof, and has been qualified by laboratory tests, and field experiments to function for its specific purpose. It also serves as a thief hole cover.

It operates at 16 ounces pressure or two ounces vacuum. When the pressure inside the tank reaches 16 ounces, the valve automatically opens. This safety device is regular equipment on B.S.&B. PERFECTION Vapor-Pressure Tanks.

Likewise, with the vacuum valve. It operates at 2 ounces. When the tank is cooling after the heat of the day, or when the crude is being withdrawn the valve automatically lets in air to eliminate or offset the vacuum and prevents the tank from collapsing. It will relieve any vacuum caused by normal discharge of the tank through the pipe line.

This is just another of the many trifles that make the "PERFECTION" of the B.S.&B. Vapor Pressure Tanks.

This Safety Valve is Regular Equipment on all B.S.&B. PERFECTION Vapor Pressure Tanks.

We would like to tell you some of the other "little things"—as well as the big things about these Tanks, and our service. May we do so? Please address Department A-12.

Black Sivalls & Bryson
INC.
BARTLESVILLE ~ OKLAHOMA

NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS

Power Tractor

UNITED TRACTOR & EQUIPMENT CORPORATION

A complete line of tractor powered road building and construction equipment has recently been announced by the United Tractor & Equipment Corporation of Chicago. This organization was formed over a year ago by a number of equipment manufacturers and distributors who have since been busily engaged in the development of their equipment lines.

The United Industrial tractor, around which all the operating equipment is designed, is built by the Allis-Chalmers Manufacturing Company at the Milwaukee plant. To make the tractor available for the widest possible range of work it is furnished either as a rubber tired or crawler tractor unit.

Included in the United Company line are the rubber tired industrial tractor, the crawler tractor, road graders and rollers, power shovels, "iron mules," scrapers, bulldozers, backfillers, loaders, hoists, arc welders, cranes, pipe-handling booms, and trailers. A representative showing of the line will be made for the first time at the Atlantic City Road Show in January.

The United Tractor is designed to combine power with light weight and sturdy, compact construction. Frameless, single unit type of construction with three point suspension is employed, with all gears and working parts enclosed.

The power plant is a heavy duty four-cylinder engine with a 4½-inch bore and 5-inch stroke. Under full load the engine speed is 1200 revolutions per minute and is under built-in governor control. A gear driven oil pump with leads to all main bearings, connecting rod bearings and piston pins provides full pressure lubrication. The engine is protected against dust by a double action air cleaner and an oil purolator.

The transmission is the automotive unit power plant type, and provides four forward speeds and reverse. Speeds available at normal engine speed are 2 1/3, 3 1/3, five and 10 miles an hour.

Lincoln Electric Company

NEW IDLING DEVICE

An automatic idling device or throttle control for regulating speed of engine in Lincoln "stable arc" welders of the gasoline engine driven type has recently been perfected by the Lincoln Electric Company, Cleveland. The new device automatically increases the speed of the engine from normal idling speed to the proper speed for welding service whenever the arc is struck. When welding is discontinued, the device automatically reduces speed of engine to normal idling speed.

The operating mechanism of the device consists principally of a small metal bellows and an electric magnet. When the arc is struck the armature of the electric magnet opens a relief valve in the bellows causing them to inflate which in turn allows a coil spring to open the engine throttle. When welding operation ceases the bellows are deflated by suction of engine intake, thus causing the closing of the engine throttle to idling position. The idling device is provided with a control level which may be set for automatic throttle control, for continuous idling speed or for governed speed.

The device is so designed that a momentary interruption in welding will not cause a reduction in speed of the engine. It is estimated that the use of the automatic idling device will effect a saving in fuel consumption of approximately 25 per cent.

This automatic control of throttle or idling device is an exclusive Lincoln feature found only on "stable-arc" welders of the gasoline engine driven type.

6000-Pound Pressure Hook-Up

REGAN FORGE & ENGINEERING COMPANY

Development of high pressure heads for service at Kettleman Hills has resulted in the manufacture of equipment that is meeting all requirements of safety in this field, according to operating officials.

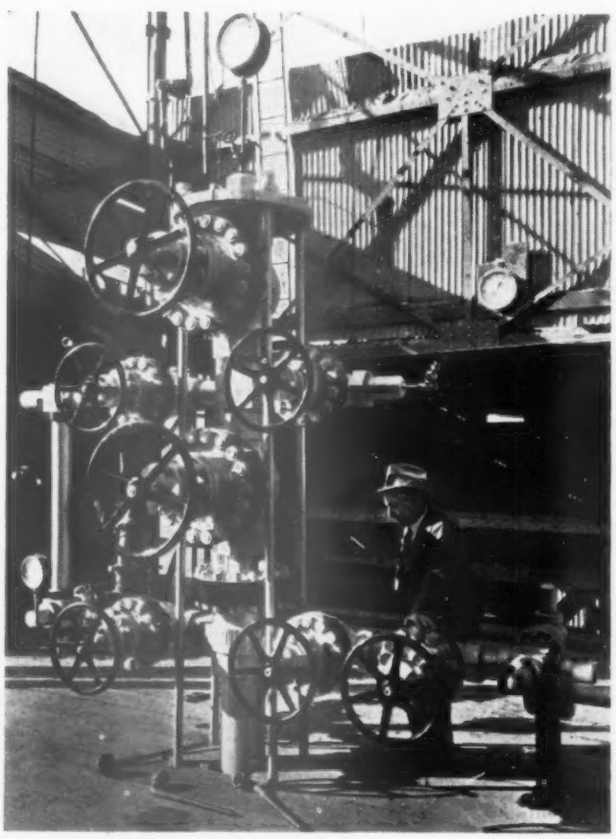
When the first high pressure at Kettleman Hills was tapped the engineers of Regan Forge & Engineering Company had already developed extra heavy equipment, anticipating such pressure, and are now producing a complete line of extra heavy equipment supplementing the standard pressure types.

The illustration shows a typical hook-up of the high pressure Regan tubing head at Kettleman Hills with Christmas tree and fittings tested as a unit to 6000 pounds pressure.

The hook-up shown in the photograph is one of several developed by Regan Forge & Engineering Company for Kettleman Hills service. The riser is 9½ inches O. D., extra heavy hydraulic tubing, with walls seven-eighths-inch thick. This heavy-weight pipe connects the top flange of the casing head in the cellar to the high pressure tubing head shown in the photograph.

The flanges of the casing head are drilled and the studs and bolts are to the AESC standard high pressure series. Four-way crosses, 6⅝-inches in size are of extra heavy design, suitable for pressures far in excess of 6000 pounds. The casing head ties and suspends a 16-inch surface string, an 11-inch second string and an 8⅝-inch oil string.

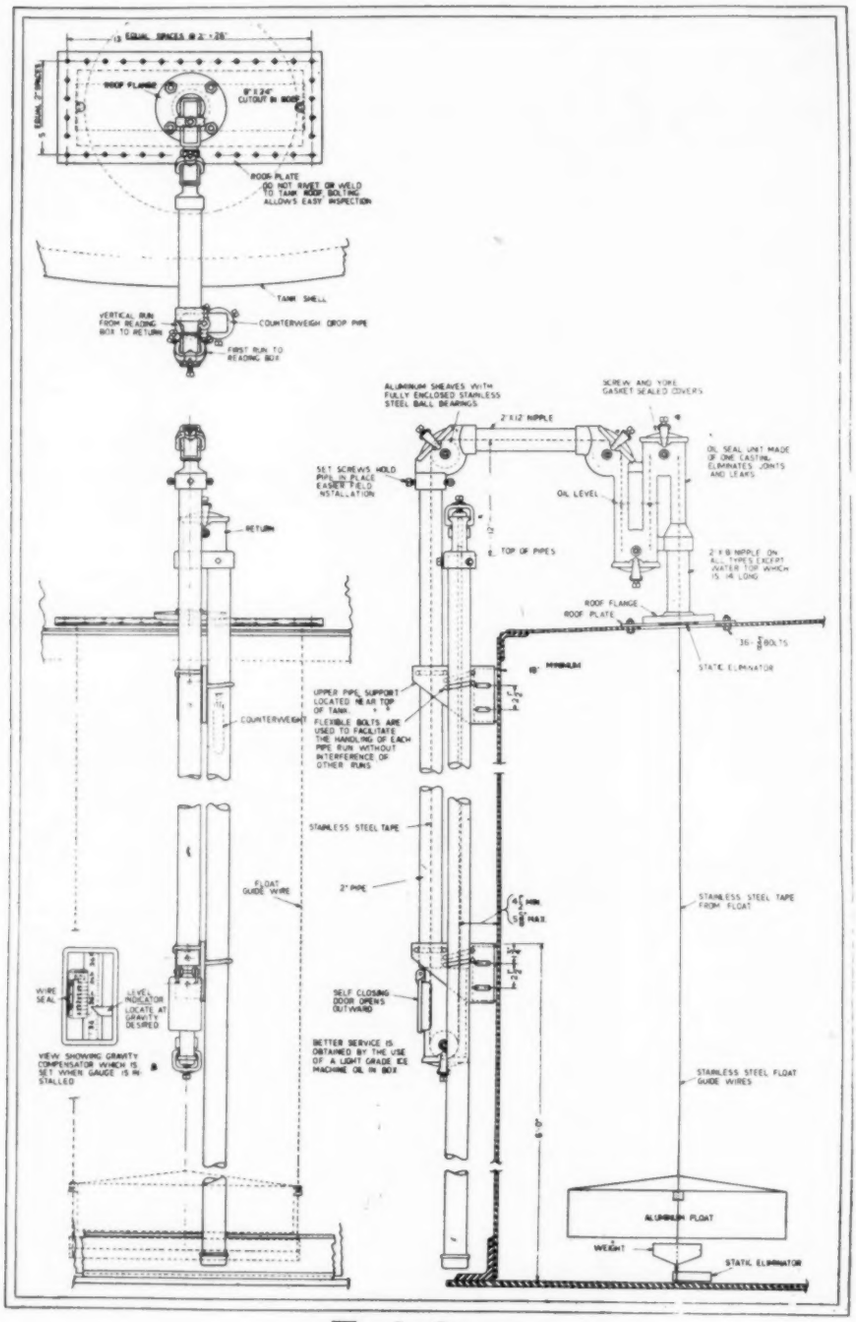
The size of tubing head is 9-inch, forged steel with male outlets, and is equipped with a combination metallic and



Regan High-Pressure Hook-up

hydraulic packing, a recent development, to offer a wide factor of safety against extremely high pressure and fire. The studs are made of alloy steel. Two 6⅝-inch and five 4½-inch 6000-pound test valves complete the hook-up. A plate flange is set at the top of the Christmas tree for connection with bolted trusses which extend to the landing flange below the casing head, offering very rigid support.

A complete series of 6000-pound equipment, including flanges in all sizes, tubing heads and other parts, are on production for such service, several parts of the equipment having been available since the first production sands in Kettleman Hills were reached.


ROOF FLANGE
ROOF PLATE
TANK SHELL
COUNTERWEIGH DROP PIPE
ALUMINUM SHEAVES WITH FULLY ENCLOSED STAINLESS STEEL BALL BEARINGS
SCREW AND YOKE GASKET SEALED COVERS
2"X12 NIPPLE
SET SCREWS HOLD PIPE IN PLACE EASIER FIELD INSTALLATION
OIL LEVEL
TOP OF PIPES
RETURN
COUNTERWEIGHT
UPPER PIPE SUPPORT LOCATED NEAR TOP OF TANK
FLEXIBLE BOLTS ARE USED TO FACILITATE THE HANDLING OF EACH PIPE RUN WITHOUT INTERFERENCE OF OTHER RUNS
STAINLESS STEEL TAPE
FLOAT GUIDE WIRE
2" PIPE
STAINLESS STEEL TAPE FROM FLOAT
SELF CLOSING DOOR OPENS OUTWARD
BETTER SERVICE IS OBTAINED BY THE USE OF A LIGHT GRADE ICE MACHINE OIL IN BOX
STAINLESS STEEL FLOAT GUIDE WIRES
ALUMINUM FLOAT
WEIGHT
STATIC ELIMINATOR

Tank Gauge

VAPOR RECOVERY SYSTEMS COMPANY

A new type tank gauge has been designed and placed on the market by the Vapor Recovery Systems Company, Compton, California. This gauge, illustrated here, is equipped with a gravity compensator and ball bearing sheaves, and is designed and constructed for adaptability to all types of gas-tight roof construction by the use of proper roof connection.

Details on this new type tank gauge are available by writing the manufacturers.

Oil and Gas Separator

PARKERSBURG RIG & REEL COMPANY

In series with the production line, the Parkersburg Rig & Reel Company's oil and gas separator is designed to provide the means of extracting dry gas for use or market.

The upper part of the separator is a mist extractor. The oil passes in near the top, and, due to the tangent direction of the flow, takes a whirling motion down over the baffles. The gas passes through perforations and is taken from the top of the field line. Oil passes on through, operating the float valve, into the line of the tank. Operation is automatic.

Parkersburg Separator

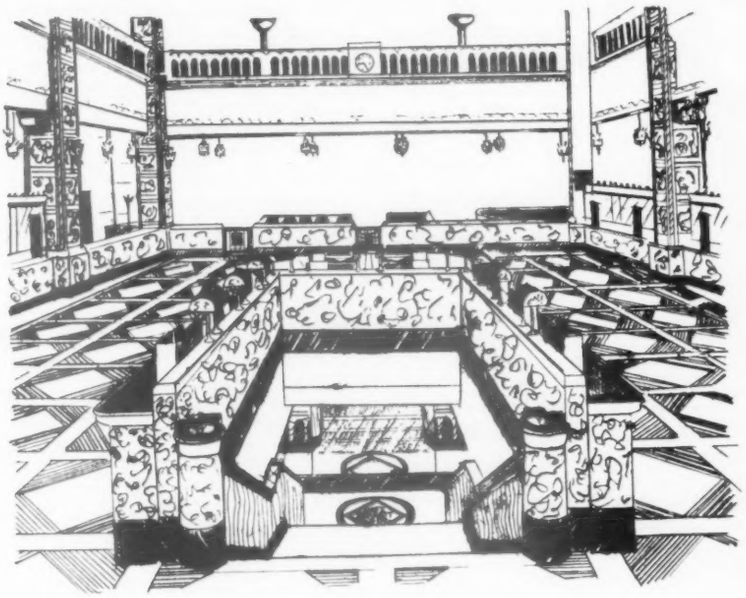
While the recovery of gas is increased, the manufacturers hold that the greatest advantage of this separator is the amount of gas saved, which, without a separator, is usually lost by evaporation. Sediment and water is drained off at the bottom. The fluid level gauge and pressure gauge are regular equipment on each separator.

The interior of the separator is made of copper bearing steel. The valve is brass and non-sanding. There are but three moving parts, which offers a point of simplicity. Various sizes and pressures are available to meet all requirements. Information available by writing the company at Parkersburg, West Virginia.

The Baum Corporation of Tulsa has recently completed a modern manufacturing plant at King and Atlanta Streets, in the Frisco industrial district, and the company is engaged in making overhead cranes, hoists and fabricated steel towers and buildings for the oil and allied industries. V. E. Baum is president of the company, and prior to organizing the Baum Corporation was connected with the Yale & Towne Manufacturing Company for a number of years.

ON KPRC

Tune in each Monday evening at 6, during your dinner hour. The Houston National's radio concert will offer real entertainment. It is devised solely for you.



Careful Management

and Sound Financing Go Hand in Hand

The trend of modern business is toward greater organizations, mass production and narrower margin of profit . . . an evolution from which only those employing efficient manufacturing and distributing methods will survive.

Now, if ever, careful planning of financial arrangements is essential. Now, more than ever, is the advice and co-operation of an old institution such as the Houston National Bank an invaluable aid.

On the basis of its record of over half a century, during which time it has given its counsel and lent its resources to many of the Southwest's greatest commercial organizations, the Houston National offers its services to business men who are facing the new order of things. You will find here a group of executives and junior executives whose advice on financial matters is entirely unprejudiced.

HOUSTON NATIONAL BANK

Main at Franklin

Heeter's Packers and Swabs

For over a quarter century the name of C. M. Heeter, Sons & Co. has been known to the oil men of America.

Heeter's Improved Patent Swabs, Corrugated Friction Sockets, Wire Line Pumping Outfits, Sand Pumps and other Gas and Oil Well Materials.

May we send you our catalog showing complete line?

C. M. Heeter, Sons & Co. (Inc.)
Main Office and Works, Butler, Pa.

FORT PITT STEEL

RIVETS

CONE — BUTTON and PAN Head

COMPLETE STOCKS

We Carry

CONE Heads in diameters ½" to 1¼", incl.

BUTTON Heads in diameters ¼" to ¾", incl.

PAN Head in 7/16" diameters.

Practically all lengths for Tank and Structural Work.

Call On Us

Maintenance Engineering Corporation

P. O. Box 1402 Pres. 2274, LD-409

HOUSTON, TEXAS

Squeaks from the Bull Wheel

My wife is a wonderful vocalist. Why, I have known her to hold her audience for hours—.

Get out!

After which she would lay it in the cradle and rock it to sleep.

"You used to call me darling, but now you don't call me anything."

"That shows my self-control."

The visitor was an ardent prohibitionist. The farmer listened patiently to his impassioned plea.

"And," concluded the visitor, "liquor ruins the body. You can see its evils reflected in the face of the many who drink."

"Well," said the farmer, "my old man just died a while ago at the age of 105. He drank a quart of good corn liquor every day of his life, and say, after he was three days dead he looked better than you do now."

Dentist—Which tooth do you want extracted?

Pullman Porter—Lower seven.

"Did you know, dear, that tunnel we just passed through was two miles long and cost $12,000,000?" asked the young man of his sweetheart.

"Oh, really, did it?" she replied, as she started to rearrange her disheveled hair. "Well, it was worth it."

Looks like rain.

Yes, but it tastes faintly like yeast.

This young man, a heavy drinker, had gone west in an effort to reform himself.

"One morning, noticing the difficulty a rider was having with his mount, he asked what was the trouble.

" 'The trouble is,' replied the rider, 'that this is a young bronco, and there's nothing in the world so hard to ride.'

" 'Oh, isn't there?' said the discouraged young man. 'I guess you've never tried the old water wagon, have you?' "

Yes, our old friend Brown has gone to his everlasting rest!

What? Did he get that government job after all?

Scotchman: "How do you sell eggs?"

"Four cents apiece for the good ones and three cents for the cracked ones."

"Crack me a half dozen."

Wife (to returning husband at seaside resort): "Oh, darling, I'm so glad you've come back! We heard that some idiot had fallen over the cliff, and I felt sure it was you."

This tire is built to stand abuse.

Just the thing! When my husband has a puncture he isn't the least bit careful what he says!

Young man, why did you kiss my daughter on the neck last night?

Now I've seen her in daylight I sort of wonder myself.

—"I'se for a five-day week. How 'bout you, Sam?"—"Man! I'se for a five-day week-end."

Was Maude in a bright red frock at the dance?

Some of her; some of her.

What's the idea of all the crowd at church?

A traveling salesman is down there confessing his sins.

Then there's the one about the Scotchman who bought two loaves of bread for supper and then sat in the subway waiting for the jam.

"Feed a cold and starve a fever," say the doctors. What we would like to know is why every girl we take out has a cold instead of a fever.

What have you there?

Some insect powder.

Good heavens! You aren't going to commit suicide?"

Where is that ham you said you would bring me?

Well, sir, that hog finally got well.

Did that patent medicine you bought cure your aunt?

Mercy, no! On reading the circular that was wrapped around the bottle she got more diseases.

How's your cold, Donald?

Verra obstinate.

And how is your wife?

About the same.

How's your brother, Tommy?

He's in bed. He hurt himself.

How did he do it?

We were playing who could lean furthest out of a window, and he won.

Now, what I want is a house at least five miles from any other house.

Oh, I see, you want to practice the simple life.

No. I want to practice the saxophone.

Your daughter is naturally graceful.

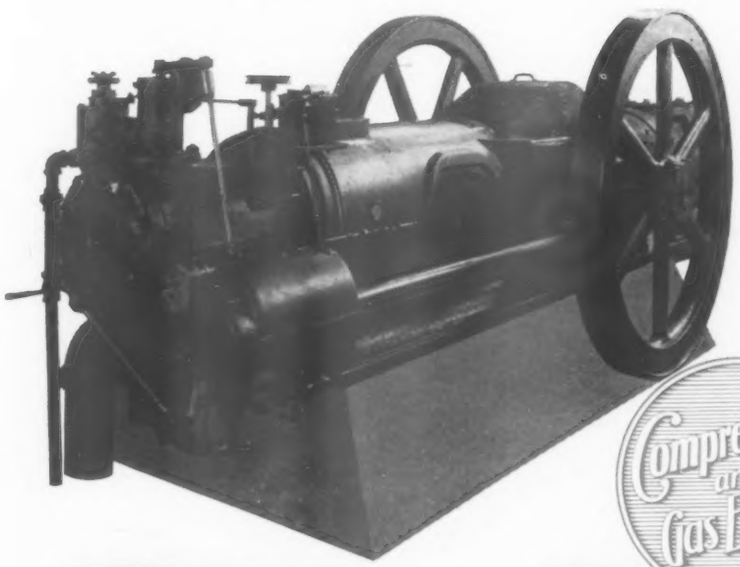
Yes; whenever she swats a fly, you'd think she imagined she was Helen Wills.

It is said that the law gives a father the right to open his daughter's letters. Who's going to give him the courage?

Presto!

The Clark "40" is Changed from Pumping Engine to Compressor

Above view shows Clark "40" with both Pumping Clutch and Compressor Cylinder attached.



All that's necessary to change the Clark "40" from a pumping unit to a compressor for air or gas lift is to attach the compressor end—without change in engine bedplate.

This convertible unit enables you to produce small leases in the most efficient manner and at a low cost consistent with the small production. The Clark "40" is a perfected 4-cycle engine, fully enclosed and automatically lubricated with filtered oil. Crosshead eliminates piston slap. 200 R.P.M. The Clark Pumping Clutch is scientifically designed for strength and durability. Double bearing removes all belt strains from engine crankshaft. Compressor cylinders are available in various sizes.

CLARK BROS. COMPANY
Olean, N. Y.

Export Offices: 150 Broadway, New York City. *Mid-Continent Sales Offices:* Tulsa and Fort Worth. *Warehouses:* Tulsa, Okla.; McCamey and Sweetwater, Texas; Artesia, N. M. *California:* Smith, Booth, Usher Co., 228 S. Central Ave., Los Angeles.

Compressors and Gas Engines

CLARK

INDEX TO ADVERTISERS

Acme Fishing Tool Company.....100
Ajax Iron Works.....
Alco Oil Tool Company..... 79
Allis Chalmers Manufacturing Co. ...
Allsteel Products Company.....
Alten's Foundry & Machine Works....
Aluminum Company of America.....
American Association of Petroleum Geologists .....
American Cable Company .....
American Iron & Machine Works....
American Hammered Piston Ring Co. .
American Meter Company .....
American Roller Bearing Company.... 65
American Steel Works.....
American Steel & Wire Company....
American Tank Company.....
American Telegraph & Telephone Company .....
American Well Works 100
Andrews Steel Company .....
B. K. Appleman 100
Axelson Machine Company.....

Baash-Ross Tool Company.....
Baker Oil Tools, Incorporated..... 20
William S. Barnickel & Company.....
Barrett Company .....
Bartlett-Hayward Company .....
Beaumont Iron Works .....
Beebe Brothers .....
Bessemer Gas Engine Company....68-69
Bethlehem Steel Company 83
Black, Sivalls & Bryson 116
Blackor Company 15
Braden Steel & Winch Company.....
Braden Steel Corporation .....
The Brewster Company..... 52
Bridegport Machine Company..... 81
Bristol Hotel 98
Broderick Bascom Rope Company....
Buckeye Traction Ditcher Company...
Buffalo Bolt Company .....
Burns Tool Company .....
Butler Manufacturing Company..... 13
Byron Jackson Company 6

Caterpillar Tractor Company .....
Central Alloy Steel Corporation.....
Chain Belt Company .....
Chicago Bridge & Iron Works 67
Chicago Pneumatic Tool Company.... 18
Clark Brothers Company 121
Coastal Oil Finding Company 114
Colona Manufacturing Company .....
Columbia Nut & Bolt Company.....
Continental Motors Corporation ....
Continental Supply Company 7
Fred E. Cooper .....
Cooper Bessemer Corporation.....68-69
Crescent Belt Fastener Company.....

Darling Valve & Manufacturing Co. . 12
E. M. Dart Manufacturing Company. 96
Donovan Boiler Works .....
Drane-Humphreys Company .....
Dresser & Gorton, Inc. .....
S. R. Dresser Manufacturing Company
The Drillometer Company .....

Eason-Therolf Tool Company .....
Economy Pump Company .....
Economy Pump & Oil Tool Company.
E. H. Edwards Manufacturing Co. .
Electric Controller Manufacturing Co. 14
Elliott Core Drilling Company .....
Emsco Derrick & Equipment Company
Expert Mechanic Shop .....

Fenwick-Reddaway Manufacturing Co.
First National Bank, Houston.....
Fort Worth Laboratories 114
Franklin Valveless Engine Company... 57
Frederick Iron & Steel Company.....
Frick-Reid Supply Corporation..... 97

Garlock Packing Company .....
Gardner-Denver Company .....
Gaso Pump & Burner Manufacturing Company 3
Gates Rubber Company 113
Gebruder Haff 106
General Electric Company .....
General Paint Corporation .....
Fred I. Getty 16
B. F. Goodrich Rubber Company.....
H. P. Gott Manufacturing Company...
Grant Oil Tool Company 113
Greene, Tweed & Company..... 96
Guiberson Corporation.....Fourth Cover
Gulf Caribbean Steamship Company...
Gulf Publishing Company.....
Gulf Refining Company.....115
Gulf States Utilities Company.....

Halliburton Oil Well Cementing Co.. 87
Hanlon-Waters, Inc. .....
Happy Belting Company .....
Hardway & Cathey 114
Haynes Stellite Company .....
Harrisburg Pipe & Pipe Bending Company .....Third Cover
Hazard Wire Rope Company.....
C. M. Heeter Sons & Company.....120
Hercules Motors Corporation.....101
Hercules Supply Company.....
Hercules Tool Company.....
Heydrick Mapping Company.....114
Hill, Hubbell & Company.....
Hilton Hotels .....
Hinderliter Tool Company .....
Hirsch, Brown & Susman 114
George O. Hollow Company .....
Charles N. Hough Manufacturing Co.
Howard Smith Company .....
Houston Engineers 107
Houston National Bank 119
Hughes Tool Company ....Front Cover
Humble Oil & Refining Company....
Hyatt Roller Bearing Company..... 31

Christian Iden 114
Imperial Royalties Company .....
Ingersoll-Rand Company .....
International Derrick & Equipment Company 4-5
International Mineral & Metals Corp..
International Storage & Warehouse Company 112
International Supply Company.....

Byron Jackson Company 6
Jarecki Manufacturing Company .....
Jensen Brothers Manufacturing Co....
S. M. Jones Company .....
Jones & Laughlin Steel Corporation..
Johnson Formation Testing Corporation

Kerotest Manufacturing Company....
Kirk-Morrow Iron Works Company...103
Kontol Company .....

Landis Machine Company .....
Larkin & Company .....
Layne & Bowler Company..... 89
Le Bus Rotary Tool Works .....
Lincoln Electric Company .....
Linde Air Products Company.....
Link Belt Company .....
Lucey Products Corporation.....
Lufkin Foundry & Machine Company..

Mac Clatchie Manufacturing Company.
Maintenance Engineering Corporation.120
McCollum Exploration Company.....114
J. H. McEvoy & Company.....
Majestic Hotel 114
Maloney Tank Manufacturing Co....
Mark Twain Hotel .....
Martin-Decker Corporation 99
Martin-Loomis Corporation 99
Martin Wagon Company .....
O. E. & G. M. Maddox.....114
Metric Metal Works .....
Mills Alloys, Inc. 111
Mills Iron Works .....
Miller Combination Bailer & Pump Co.
Lee C. Moore & Company..... 42
Munger Oil Information Service....114
Murray Tool & Supply Company.....

National Petroleum Engineering Corp..102
National Supply Companies..... 19
National Tank Company.....
National Tools & Metals, Inc. .....
National Transit Pump & Machine Co.
National Tube Company .....
Naylor Pipe Company 47
New Jersey Asbestos Company.....
Norris Brothers .....
Norvell-Wilder Supply Company 109

O. C. S. Manufacturing Company....
Oakite Products, Inc. .....
O'Brien Steel Construction Company..
Oil Well Supply Company..... 22
Oil Well Improvement Company.....

Page Steel & Wire Company.....102
Parkersburg Machine Company.....

Parkersburg Rig & Reel Company.... 49
Patterson-Ballagh Corporation 72-73
Pattin Brothers Company .....
Peden Company .....
Penberthy Injector Company .....
Petroleum Engineering University....
Petroleum Rectifying Company..... 45
Petroleum Equipment Company .....
Pittsburgh-Des Moines Steel Co. ....
Pittsburgh Equitable Meter Company.. 10
Pittsburgh Screw & Bolt Corporation
Pittsburgh Steel Products Company..105
Pittsburgh Valve, Foundry & Construction Company 91
Pratt & Whitney Company .....

Quaker City Rubber Company.....
Quasi-Arc, Inc. .....

Reed Roller Bit Company .....
Reading Iron Company .....
Regan Forge & Engineering Company 9
Joseph Reid Gas Engine Company....
Remington-Rand Business Service....
Republic Supply Company.....
Republic Iron & Steel Company.....
Resistcor Engineering Corporation...
Rice Hotel .....
Rodless Pump Company .....

Shaffer Specialty Company .....
Shaffer Tool Works .....
Sheldon Machinery Company .....
Sinclair Refining Company .....
S-K-F Industries .....
A. O. Smith Corporation.....
Smith Separator Company.....
H. C. Smith Manufacturing Company .....Second Cover
Howard Smith Company .....
South Chester Tube Company..... 93
Southern Engine & Pump Company...
Southern Mill & Manufacturing Co....
Spang & Company 17
Spang, Chalfant & Company..... 36
Springfield Wagon & Trailer Co.....
Eugene C. Stacy .....
Standard Supply & Hardware Co. ....
George Steiner 114
Jesse R. Stone 114
Star Drilling Machine Company.....
Stoody Company .....
Sullivan Machinery Company.....

Templeton, Kenley & Company.....
Texas Creosoting Company .....
Texas Cyclone Fence Company.....
Texas Iron Works .....
Texas Power & Light Company .....
Timken Roller Bearing Company.... 35
Titusville Iron Works 8
Triad Products Company .....
Trimont Manufacturing Company..... 95
Tyler Tube & Pipe Company.....106

Union Carbine & Carbon Corporation.
Union Wire Rope Corporation.....
United Tractor & Equipment Corp. .. 41

Vez Company .....
Vitaulic Company 11
Victor Balata & Textile Belting Co...
Vulcan Steel Tank Corporation.....

Wagner Electric Company .....
Waukesha Motor Company .....
John F. Weinzierl.....114
C. W. Webster 114
Westcott Valve Company .....
Westinghouse Electric & Manufacturing Company .....
West Texas Utilities Company..... 85
Calvin Wheat Studios 114
W. E. A. Wheeler & Company.....114
Wickwire-Spencer Steel Company....
Wico Electric Company .....
Wiemann-Kemmerer-Wright, Inc. ....
J. H. Williams & Company.....
Wilson Supply Company 33
Wilson-Snyder Manufacturing Co. ....
W-K-M Company .....
Word Specialty Manufacturing Co....
T. T. Word Supply Company.....
Worth Hotel .....
Wright Manufacturing Company .....
Wyatt Metal & Boiler Works.....

Yale & Towne Manufacturing Co. ...
Young Engineering Corporation.....

Zero Hour Torpedo Company.....

Every precaution has been taken to insure accuracy in listings in this Index to Advertisers, but last minute changes may result in omissions or erroneous listings for which we ask your indulgence. This index is for the convenience of readers and we do not assume liability for improper listings

"I'll say they're good couplings"

"In all the years I've used 'em I never found a Harrisburg Coupling that didn't rate a 100% mark for dependability, efficiency and all 'round satisfaction.

"And I'll bet any other Harrisburg user you talk to will say the same thing."

"Here's how they're made"

"From ladle to ingot, then on to plate or billet, to cylinder and finally to finished coupling—every operation takes place in Harrisburg's own plant, under the watchful eyes of Harrisburg's thoroughly experienced and specially trained supervisors.

"In owning and operating its own open hearth furnaces, rolling mills and forge shops Harrisburg completely controls *every* phase in the making of these widely used couplings. And that's a real advantage to all their customers!

HARRISBURG PIPE & PIPE BENDING CO.

HARRISBURG, PA.

Fully equipped with Our Own Open Hearth Furnaces, Rolling Mills and Forge Shops.

DISTRIBUTORS:

Harrisburg Pipe & Pipe Bending Co. of Texas, Inc., Houston, Texas
Harrisburg Supply Co., Tulsa, Oklahoma

HARRISBURG

FORGED SEAMLESS STEEL COUPLINGS

It's a

DEAD STOP

for runaway Tubing

There's a break, a start for a long run, but the striker weight bobs and like the wiry little mustang's hoofs, the slips dig into the casing walls . . . then it's all over.

The Guiberson Tubing Catcher will stop a string of falling tubing within three inches. It must stop its own weight in an empty casing, within that same span, or it cannot leave the factory. The strong spring operates with or without fluid in the hole. The heavy striker weight overcomes the retarding action of mud or paraffin. Dove-tail tracks keep slips in perfect alignment and guide them instantly and accurately to the casing walls. To the ex-cowhand roustabout, the Guiberson Tubing Catcher "corrals that tubing tighter 'n a boot."

Fully Patented

"Better Be Safe Than Sorry"

THE GUIBERSON CORPORATION
Box 1106, Dallas, Texas

Calif. Branch: 1506 Santa Fe Ave., Los Angeles

621 Kennedy Bldg. Tulsa — 321 Osage St. Ponca City — 506 Trust Bldg. Newark, O.

GUIBERSON

BETTER BE SAFE THAN SORRY